



MEALS
IN A
PILL!

SPACE
FARMS!

PALEOFUTURE

MAGAZINE

ROBOT
COOKS!

RYAN V LOWER



A HUMBLE NOTE FROM THE EDITOR



Matt Novak

Attitudes toward what food to put on the dinner table (and how to put it there) have changed a lot in the last couple hundred years. Novels of the late 19th century, like Edward Bellamy's *Looking Backward*, imagined community kitchens that aligned with his socialist-utopian views. The 1950's obsession with conformity and efficiency made future meals look a lot more like pills and TV dinners. And alternative sources of protein -- from algae to insects -- made sense to those of the 1970s who were worried about food shortages of the future.

Growing up, my parents told me I could have as much as I wanted of two things: food and books. As long as I ate the food they cooked and I read the books that I asked them to buy me there would be a seemingly endless supply. Most children aren't so lucky. It's with this self-awareness that I became interested in food production and a man named Norman Borlaug. Borlaug won the Nobel Peace Prize in 1970 and is credited with saving over a billion lives through his work developing disease resistant crops.

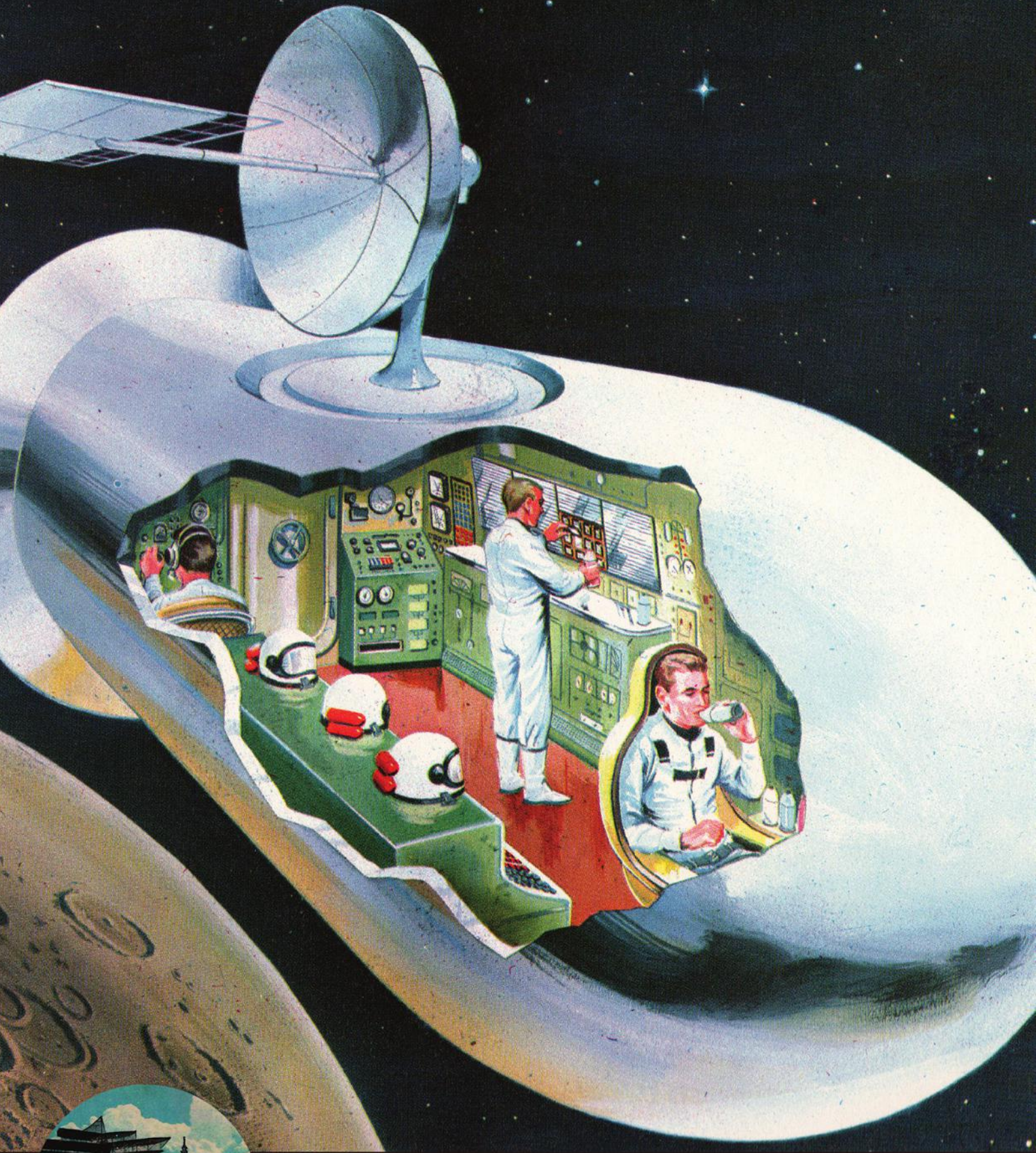
History professor James E. McWilliams explains in his book *Just Food* precisely how passionate people can get about food. "It hasn't taken me long to learn that challenging ideas about food is not unlike challenging ideas about religion." It's with this same passion that people argued against Borlaug and his Green Revolution. And it's with this same passion that well intentioned people use scare tactics to preach against the safety of genetically modified crops.

Now, I'm not saying that science has the answers to all the pressing food challenges that we must address in the next 5, 50 or 500 years. But in 2011, with 925 million people facing hunger as their reality each and every day, I dare say we must find our generation's Norman Borlaug. Quickly.

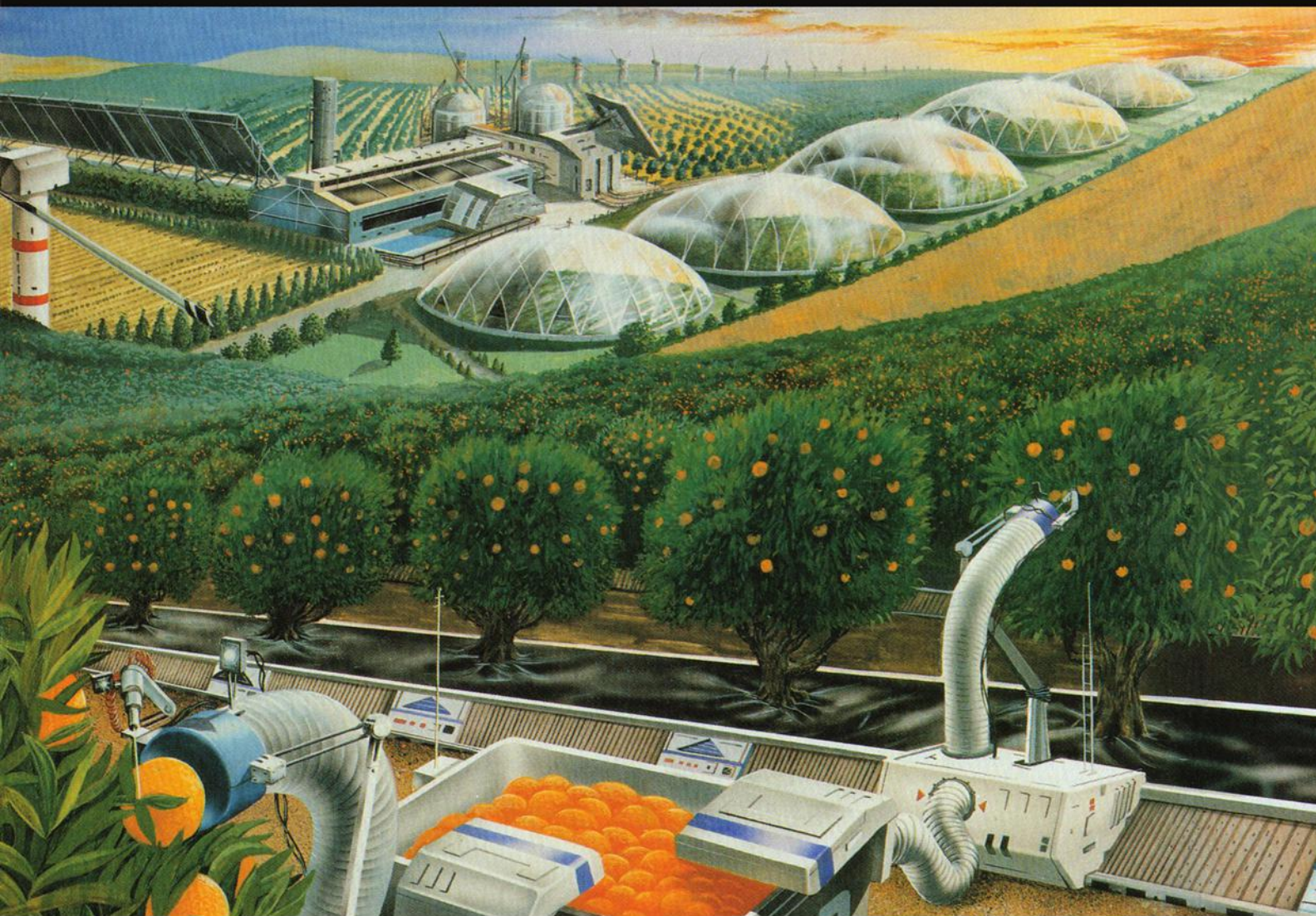
Contributors: Bob Sassone, Josh Calder, Ryan V. Lower, Fábio Fernandes, Mike Frodsham

A special thanks to Andrew Overton, Emil Ovemar, Darrell Aubert, Jason Tester, Casey Allen, James Gilbreath, Rich Scarle, Joe Germuska, Scott Conner, Jan Marti, Alison Carey, Elena S, Corey Spoden, Amy Sanders, Andrew Hazlett, Leslie Kruempel, J Alan Shelton, Oliver Sifuentes, Christopher Heiny, Dean Calcagni, John Cason, Kelley Forbes, Tullio DeSantis, Kelli Shimabukuro, Beverly Bass, Leslie Singer, Richard Hamer, Wim Korver, and Sarah Crowder.

Paleofuture magazine is published under a "Copy Things From This Magazine and Tell People You Wrote Them" GFY license.

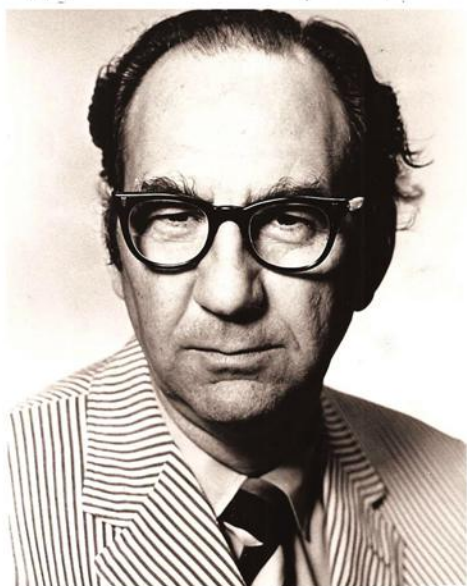


The illustration above by Roy G. Scarfo shows a direct radiation system that could be used in space for the refrigeration of food. The painting can be found in the 1965 book *Beyond Tomorrow: The Next 50 Years in Space* by Dandridge M. Cole.



This illustration of robot pickers on the farm of the future appeared in a number of children's books in the 1980s.





Science Gets Dinner

Chapter 8

By Victor Cohn

Gus Farmer, 1999, looked over his land from his helicopter—his flying control tower. He passed over the low, air-conditioned structure of metal and plastic that had replaced the red barn, checked a weather broadcast, then flicked a set of radio switches. A row of robot farm machines below began to whirl up and down Gus Farmer's fields.

Farm machines in 1999 did many operations at once—breaking the soil and at the same time conditioning, cultivating, spreading fertilizer, pest-killers and seed.

Farmers in 1999 planted new hybrid corn, wheat, potatoes, developed by atomic bombardment of seeds to produce mutation. They used synthetic fertilizers, soil conditioners, hormones and pesticides; antibiotics, trace minerals, leaf-removers, growth-regulators.

Land had become precious, but was used well, under strict laws and compulsory soil conservation. Starvation had been abolished, and in America people still ate steaks. Still, old menus and cookbooks of the 1950s seemed antique and were displayed in museums.

The food on our tables is going to change. It must, if the world of the future is to eat.

It must change in some countries far more than in ours. Some food will come from factories.

In our country, certainly, the change should be for the better—more chicken, beef, pork, butter, fruits, vegetables for everyone. New varieties and new foods. Preserved in new ways, more astonishing than freezing.

Agriculture has awakened to the fact that man can improve on nature.

Chemists are finding certain "organic polyelectrocytes" 200 to 1,000 times more effective soil conditioners than manure, peat moss or plant residues.

Seeds with protective coatings should lead to thin, even planting, instead of the present practice—sowing many times more seed than you expect to harvest.

Plant Hormones and other chemicals are being found to cause leaves to drop off plants or grow larger; make fruit cling

to branches and prevent premature falling; make stems longer or shorter; stimulate root growth; or kill one type of plant and not another. Chemicals can produce fruit without seeds; alter plants' shapes for easier harvesting; prevent sprouting in storage; and speed or slow ripening to avoid frosts and fit canning schedules.

MORE PRODUCTIVE

One farmer now can feed and partly clothe 15 people, compared with eight in 1910 and fewer than five 100 years ago. By 1975 the figure may reach 30—one-third



In 1955 journalist Victor Cohn wrote a syndicated series titled 1999: Our Hopeful Future which was expanded into a book in 1956. This partial chapter about food of the future appeared in the February 13, 1955 Post-Standard (Syracuse, NY).

as a result of increased mechanization, two-thirds the result of scientists' work.

Forty per cent of the saleable part of the entire U. S. crop is now lost to weeds, bugs, rats, diseases and other plagues. This loss is starting to dwindle. An acre of corn can yield 53 bushels today that without weed control might yield seven.

Still, not every place—and not forever even in the United States—will familiar methods be enough. Only 7 to 11 percent of the world's land area is now considered suited for cultivation. Every new 1 per cent will come hard.

"It is now evident," say the prophets, "that some factory process is likely to furnish man with a new source of food, in enormous quantities and at such a cost that the status of whole populations may be changed."

What kind of food?

WILL HAVE "YEAST MEAT"

Protein, essential to tissue building and life, is the greatest need. Our best present sources—meat, eggs and milk—are luxuries in most parts of the world.

Crude molasses, the waste product of sugar-making, can be fermented by yeast organisms into edible "yeast meat," as rich in protein as beef. It is being done in Jamaica on a pilot scale.

Beef cattle, well-managed, yield about 50 pounds of protein an acre. A plantation that produces five tons of sugar an acre can yield 2½ tons of yeast, or over a ton of protein an acre. Some yeast strains produce fat.

Wood can be grown on billions of acres unsuited to other farming. Man, unlike goats, cannot digest cellulose—the product of trees—but cellulose can be converted into digestible sugars.

These then can be used for growing food yeast. Or producing alcohol for liquid fuels.

Tons of wood sugar are already available in the sticky waste liquor of pulp-making. This has been dumped into streams, where it kills the fish. It is being tried to grow fodder yeast in Wisconsin.

EDIBLE FATS FROM COAL

Algae-farms are another possibility. Edible fats can be made from petroleum and coal.

Science's star-gazers see syn-

thetic food, and talk of "economic synthesis of foodstuffs from carbon dioxide, water and ammonia, with solar energy's help." They talk of "producing artificial protein fibers by causing protein molecules to join in long chains, similar to the fibers in steaks" . . . of "mixtures of amino acids, instead of more complicated protein" . . . of "starch from carbon monoxide acted on by the sun."

One day, maintains one such gazer, chemist Jacob Rosin (in a new book, "The Road to Abundance"), we will give up ordinary plants except as decorations.

We will let chemistry, he says, do the food-producing job better, just as chemistry has already improved on plants in making drugs, fibers, rubber and dyes. "Our grandchildren will hardly believe that we were so primitive and barbaric that we had to eat cadavers of dead animals to stay alive."

Perhaps. Who knows?

As of today, most of us would prefer the cadavers—those luscious steaks, well done or rare. Roast beef. Hot dogs.

This is where the food factories can rescue us too—help us live as high as ever off the cow and hog, though a well-fed beef steer converts only about 12 per cent of its feed into meat.

While we human beings may or may not develop a taste for yeast, algae or petroleum, animals almost certainly will be fed such fodders. And factory methods may release so much feed that the conversion loss will become unimportant.

WELL CUT DOWN WASTE

Other developments should help. Insect cultivation for feeds may be possible. Synthetic vitamin and antibiotic-treated feeds can speed animal and poultry growth as much as 30 per cent. Animal diseases are being licked. We are starting to raise sheep that habitually produce twins.

Some authorities think new breeds should be investigated—the agouti, a South American rabbit-sized rodent, or the fleshy kangaroo.

We will get our future food certainly, from all over the world.

We will eliminate waste—spoilage today destroys 20 per cent of

all food before it reaches the kitchen.

A University of Michigan scientist has walked around with a year-old raw hamburger in his pocket, in an air-tight disk. Its bacteria killed by atomic waste-material radiation, it stayed juicy and fresh.

Such radiation will keep meat, fruit and vegetables wrapped in plastic on your shelves. It may also control trichinosis—radiation kills trichina larvae in hog carcasses.

• • •

Bio-engineers ran 1999's food factories by continuous-process methods. Herds of microscopic creatures, fed wastes and minerals, grew into animal feed and human food supplements, including some intriguing new dishes like critter-fritters. Algae grew on carbon dioxide and nutrients from cities' sewage.

For 1999's nature-lovers, there had been a rebirth of forests.

For their 1999 vacation, the John Futures, for example, visited the Canadian woods. Beams of atomic radiation, instead of saws, cut lumber. Foresters carried hypodermic needles to help trees grow in a third the time it once took—every genetically-tailored tree tall and straight, and in some cases, by design, almost limbless.

For lunch the Futures ate wood steak. Planked. And loved it. All except Billy who bawled, "I want an oil-cream cone."

• • •

TOMORROW—New Treasure, the Sea. The sea is a great, unexplored mine, rich in food and minerals. How can we extract its treasures for human use? What kinds of food, besides fish, can we get from the sea? What important minerals can we get from the sea?

([C] Minneapolis Star and Tribune Co.)

Texas Gets Letter Sent to 'Heaven'

DALLES, Tex. (AP)—A letter showed up at the Dalles post-office addressed to "St. Peter, Pearly Gates, Heaven."

The letter was postmarked Gatlinburg, Tenn., and a postal clerk there had scrawled on it. "Try Texas."

Anyone for a Garchidrose?

Farmer Jones stepped to a small black instrument panel at the rear of the air-conditioned plastic "bubble" in which we sat, my wife seated beside me - I had brought her along to write the woman's angle of this interview with a Year 2000 farm family for "Atomic Life." We had just come up a ray-powered elevator from the family's spacious bomb-and-fungus-proofed, solar-conditioned subsurface quarters. We were surveying his fields.

Farmer Jones pressed a button marked "Activator." There was a slight hum and a cylinder rose in the field a few feet beyond the clear plastic wall. A door opened in the cylinder and a robot, closely resembling a 1956 man, stepped jerkily out into the field.

"I must apologize for my hired hand," Farmer Jones said lightly, "Since full parity prices have been removed from our crops, I haven't been able to afford a newer model. But, he has served me well. A couple of new tubes and a paint job will tide him over for another year or two."

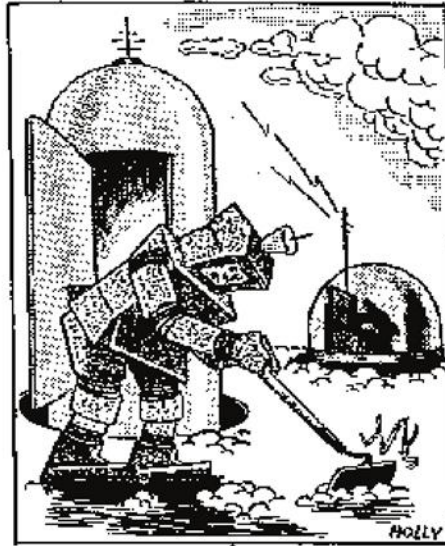
Farmer Jones was now operating a small lever that projected from a squarish box that stood up from the floor. The lever seemed to swing around a 360-degree circle and, as I watched, I could see that this was the control for the robot. I turned back to the field to watch development. I'd already asked about the quality of his crops.

The robot moved swiftly now, under Farmer Jones' guidance. "Carrot, perhaps?" queried Farmer Jones. "Or a turnip; perhaps a tomato?" he asked, turning the robot this way and that in the rows that could be seen beyond the plastic. There was very little foliage to mark the rows, produce being grown these days for the edible roots and fruits with a minimum of green waste. Chlorophyll derivative sprays replaced greenery, as I had already observed in my extensive farm and garden writings.

Perhaps we should have a leaf or two of spinach, too," Farmer Jones commented,

steering the robot on another course to a green section of the field into which the machine almost totally disappeared, so tall was the vegetation.

"I'll bring the man in now," Farmer Jones said, and guided the robot to a belt conveyor box which projected beyond the bubble. "Haven't been out in the fields



since we were H-bombed in the last war," he said. He laughed ruefully, "Don't think it would be healthy," he said, "still 'hot'; but you'd be surprised what that bombing did for the soil. Things grow like crazy; and the robot doesn't mind a bit sowing the seeds and keeping the place up."

The impromptu harvest came tumbling into the bubble - through a radiation trap. Farmer Jones explained. "They're safe to handle now," he said, and pressed a "Deactivator" button that left the robot hired-hand standing at attention. The humming stopped.

The vegetable were all that Farmer Jones had previously boasted that they would be. Carrots three feet long. I took a sample nibble of one; cleaned and completely sanitized by passing through the radiation trap. It was delicious. So was the turnip, four feet in diameter and as tender as butter. I carved a chunk with my electronic pocket incisor and passed it to my wife who has always had a penchant for raw

vegetables. She exclaimed with delight at its flavor.

The giant tomato, fully as large as a regulation basketball, gushed red juice of tantalizing aroma when I pricked the skin with my incisor.

The spinach leaves were far larger than palm fronds, but I have persisted in a childhood aversion for this delicacy. I merely examined the leaves for texture.

"No sand," commented Farmer Jones, "and the flavor is very similar to lemon squash. All the old-time vitamins, though."

We chatted on crop prospects and the market outlook while Farmer Jones sent his man after a handful of cherries, which were chilled by dry ice in the hands of the robot before they reached us. One apiece was more than enough Farmer Jones asked:

"Would your wife like to have a nice, fresh corsage? I've something new I've just perfected."

He dispatched the robot on another guided errand. The corsage that was deposited on the conveyor belt was, indeed, "something new."

"I call it 'garchidrose'," Farmer Jones said. "I've combined gardenia, orchid and rose in one, together with fern, to grow a complete, multiple-flower corsage on one plant. It does need a bit of ribbon," he apologized, "but I haven't found the way to grow the ribbon yet!" My wife was delighted.

We turned to leave.

"By the way," I said. "These vegetables of yours; they must be very high in vitamin content."

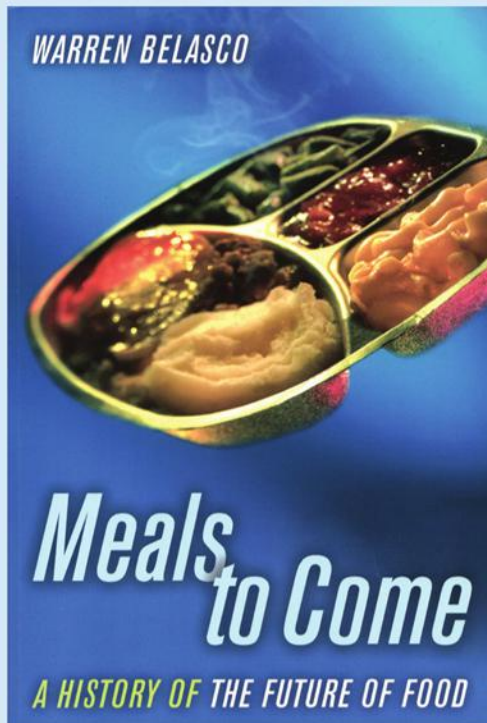
"They are, they are," he said. "Extremely so."

"They you must be a very healthy man," I said.

"Me? Oh no; I never eat them. No roughage for me. I have ulcers. I'm strictly a cottage cheese and pill man, myself."

MEALS TO COME: NEW NUTRITION OF 1933

Meals to Come: A History of the Future of Food by Warren Belasco is one of my favorite books ever. So well researched and written, Belasco dissects the late 19th and 20th century promises of future food. On page 217 he describes the 1933 Chicago World's Fair and American attitudes at that time toward meal pills. While I think Belasco is correct in his assessment that meal pills felt inevitable for many people of that generation, it's important to remember that there were indeed skeptics.



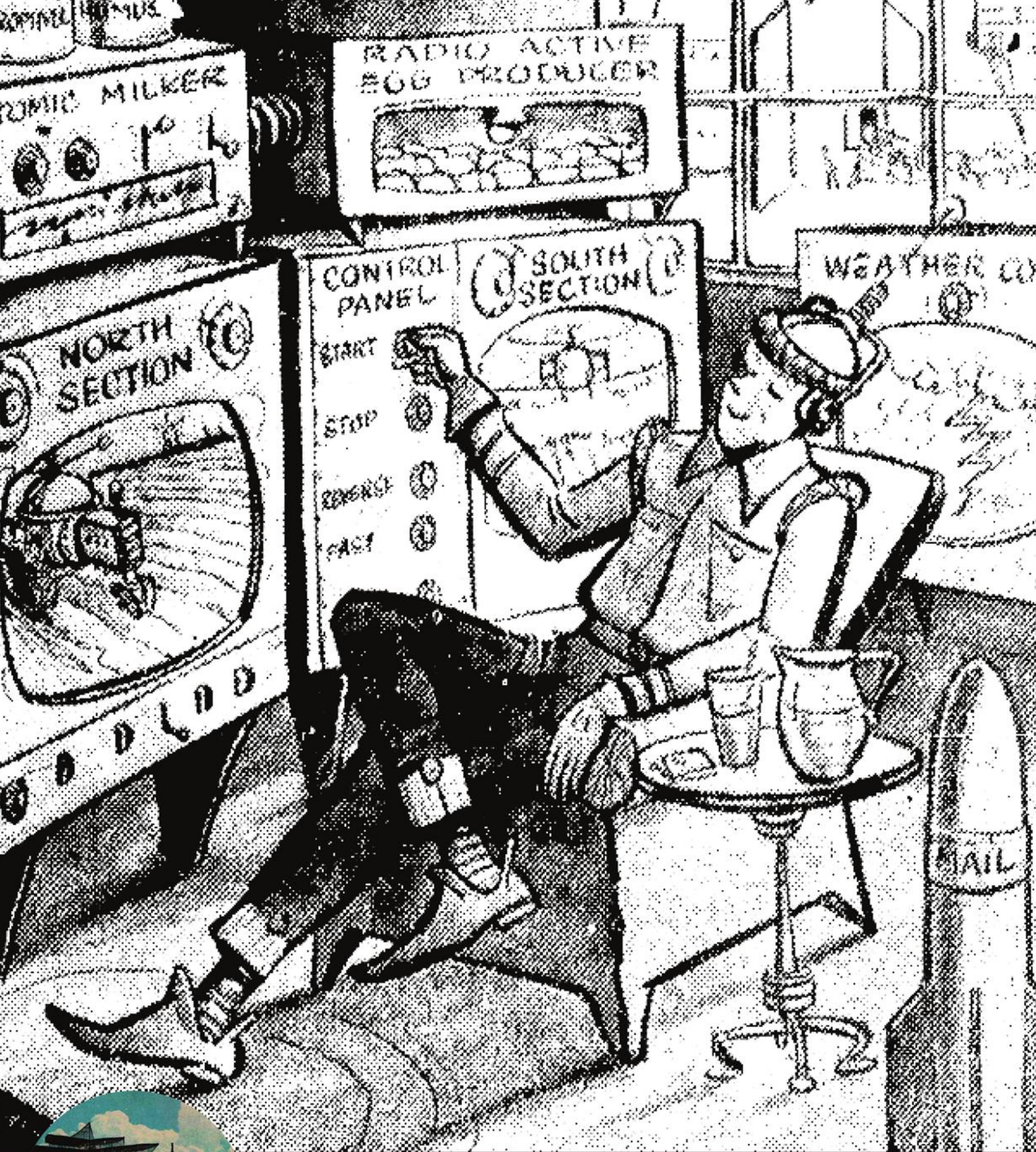
Issues of faith and control underlay much of the popular ambivalence about modernism. If, as the slogan at the 1933 Chicago fair proclaimed, "Science Finds -- Industry Applies -- Man Conforms," there is not a lot that Man can do except sit back and try to enjoy the ride. The belief that modernization is both unstoppable and indifferent to individual desires probably explains the persistent popular belief in the inevitability of the meal-in-a-pill, that scary New Nutrition extrapolation. While most people vow and hope that they will never rely on pills for food, they presume future generations will conform to whatever "science finds" - pills, algae, or other dystopian horrors proposed by the "brave new world of totalitarian technics."

I'm fascinated by trends in futurism, but I must always remind myself that people of a given generation are not of one mind. Thinking about the great number of cultural, political and social divisions present in 2011 helps to keep this in perspective. Futuristic themes we find odd today may appear to have been widely accepted in their time, but the fear of a robot uprising in the 1930s, or the inevitability of an incredibly short work week in the 1960s, or building a roof over an entire city in the 1940s, all had their fair share of skeptics. Accurately getting a feel for the acceptance of these ideas is one of the greatest challenges for historians.

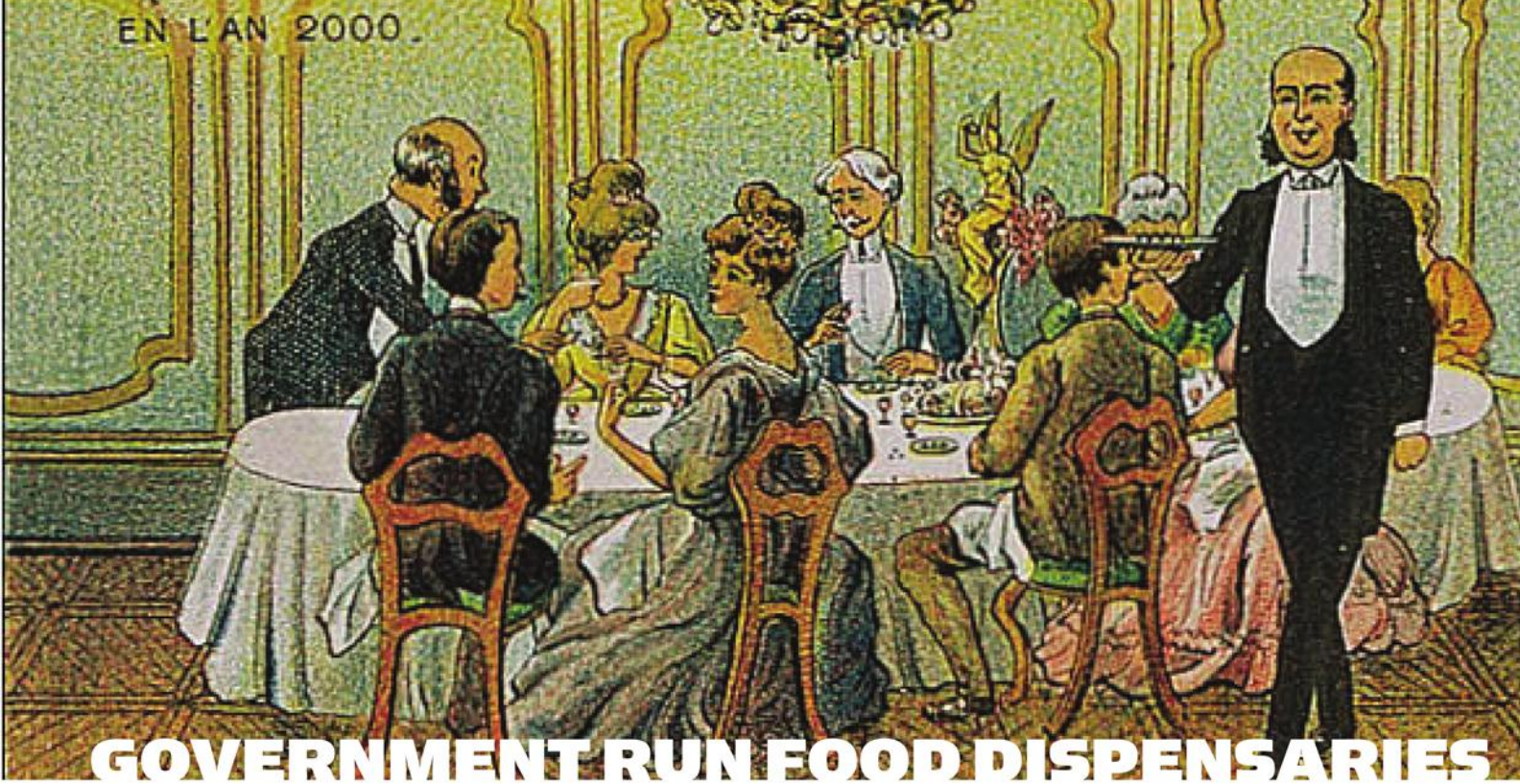
I'm just as interested in how many people really thought we'd have a jetpack by now as I am in why we don't have that jetpack. So if anyone has creative ways of gauging public attitudes toward these futuristic ideas of the past, I'm all ears! Well, not literally. I only have two. But will people in the year 2111 assume that the people of 2011 thought they'd all one day have three ears?

The article at left about a fictional farm of the year 2000 is from the November 4, 1956 Independent Press-Telegram magazine, Southland. A version of the article above appeared previously on Paleofuture.com.





The December, 1957 issue of the Kansas State College Ag Student, a magazine for agriculture students at Kansas State, featured this tongue-in-cheek illustration of a farmer from the year 2000.



GOVERNMENT RUN FOOD DISPENSARIES

When the food of the future is once in vogue, the food dispensary, licensed by the government, will long since have supplanted the butcher shop and the grocery store. We'll breakfast and lunch and dine by prescription at a cost of 10 or 15 cents per day per capita. Doubtless our houses won't be heated and supplied with power from a Keely motor at a penny a day additional, but the chemical or artificial food of the future is already a moral certainty. For does not Flammarion describe it in "Omega," and has not Berthelot, its chief apostle, been elevated from the laboratory to the foreign office of France?

Given the formula for our food, says Berthelot, the father of the artificial food idea, and why not

prescribe it from the chemist's? Surely the nitrogen and carbon of the beefsteak may not be as grateful to the palate if absorbed from a capsule or masticated in a tiny tablet, but the bones and the blood, the flesh and the sinews will be just as well supplied with their essential material, their own special foods, provided always the prescription is right in proportion, and, after all, the pleasures of the table have ages on end been absorbing too much of the time and inclination of man and woman. When the area of chemical food comes, we shall have done with symposia and supper parties, Welsh rabbits and golden bucks.

There are certain elementary food which a man can't do without. He must absorb, or eat and drink, if

you please, carbon and nitrogen and calcium for his bones. Without going too much into dry detail, he must absorb or receive each day, to repair the waste of his tissues, calcium, carbon, nitrogen, oxygen, hydrogen and sodium. There are other trifling chemicals like phosphorous, which is an awful thing to burn oneself with, which the well fed man needs. But he could get along without it. He could get along without sodium, were it not for the fact that salt is chloride of sodium, and nobody can get along without salt. It isn't a simple, an element, but it is absolutely indispensable. When the era of the chemical food sets in, we'll all be in the habit of stopping morning and evening at our favorite dispensaries for a bracer of salt.

The article above is from the January 1, 1896 Indiana Progress (Indiana, PA). The accompanying illustration from a French postcard of the year 1900 is of a "chemical dinner" in the year 2000.





DINNER

WITH

THE JETSONS

by BOB SASSONE

I've often wondered which time I'd like to live in more, the rock house and dinosaur-filled Stone Age of "The Flintstones" or the whiz-bang, computerized future of "The Jetsons." I used to think it was "The Jetsons." Flying cars! Robots! 3D TV! Moving sidewalks! Those are things that make a boy raised on science fiction magazines very excited. But if you include food? I'd have to go with "The Flintstones."

In the first episode of "The Jetsons" (titled "Rosey The Robot" - yup, with a "y," not an "ie"), Jane (who is 33 years old, which seems rather odd since daughter Judy is 15 - I wonder what she and George were doing in high school?) is in a panic because the Foodarackacycle, the machine that creates food at the press of a button or two, is on the blink. Coffee tastes like tea, hot fudge pizza comes out instead of scrambled eggs, and the whole thing eventually just explodes because it's so old. They need a new one, so George has a plan to ask his boss Mr. Spacely for a raise.

Conveniently, Spacely's wife can't cook dinner for him that night and he longs for a home-cooked meal (which doesn't really make sense when so much of the food appears instantly from a machine he could probably do it himself), so he invites himself to the Jetsons apartment for some home cookin'. If George can give Spacely that home-cooked meal he'll get the raise. Rosey saves the day by making a roast out of leftovers. Spacely loves it. In fact, Rosey's pineapple upside down cake secures George's job and raise.

By the second episode, "A Date with Jet Screamer," the Jetsons have a brand new Foodarackacycle. Though I'm not sure if it's "new," exactly. Where the one they had before was simply push button, this new one needs punch cards inserted into it. But the result is the same: instant meals that the wife (or Rosey) don't even have to prepare. While Rosey shows that she *can* cook, she really doesn't have to. And that's why there's no food joy in the future. "The Jetsons"

shows us that it's all push-button insta-meals and flavored pills. It's hard to picture a man or woman cooking all day to make a Thanksgiving meal: basting the turkey every once in a while, trying to get a pie crust just right, mixing the perfect martini (the Jetsons have a machine for that too). There's something intoxicating about a home filled with the smells of food cooking, something beautiful in the process of learning a recipe and trying to create a meal from ingredients. Something we can share and pass down to our family members and friends. In the future, it all seems to be done behind a giant gray wall filled with buttons and lights.



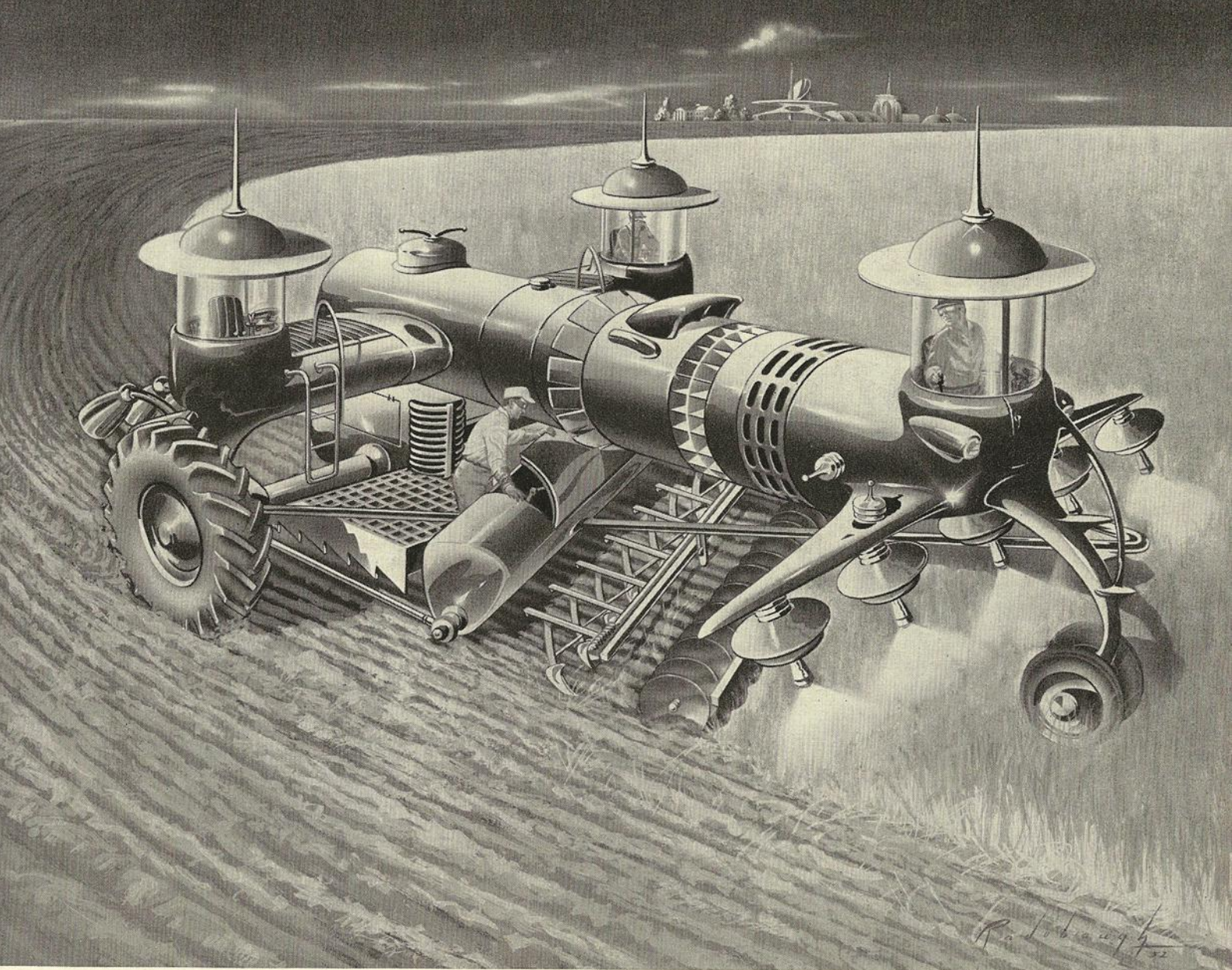
I haven't watched all of the episodes of "The Jetsons" in quite some time, and I wonder if cook-books are going to be a thing of the past if the food world depicted by the show ever comes to be. As it is, this Foodarackacycle contraption isn't made very well. By the second season the Jetsons need yet *another* new one, which they win on a game show. Maybe Foodarackacycles, like computers, have a built-in obsolescence. Maybe in the future Foodarackacycles are made by Microsoft.

So for the food, give me "The Flintstones." They might have to power their cars with their feet, but at least they have Brontasaurus ribs.



Bob Sassone
<http://sassone.wordpress.com/>





When a single machine does a season's farming...

National Oil Seals will protect the bearings

Some bright morning in the future, the farmer's crew will board an ingenious machine. They'll push a few buttons, move a lever. Then the miraculous behemoth will condition, break, cultivate and fertilize the soil, sow and germinate the seed—all in one operation. Whatever tomorrow's "once-over tillage" machines are like, they will use countless bearings. And those bearings, as today, will depend for efficient operation on reliable lubricant seals.

National Oil Seal engineers are constantly developing and improving oil and lubricant seals—not only to meet present-day problems—but to match the imagination of tomorrow's most forward-thinking design engineers. Such "years-ahead" research means National Oil Seals can give you "years-ahead" performance in your products of today. National engineers like tough sealing problems. They would welcome a chance to help solve yours.

NATIONAL MOTOR BEARING CO., INC.

GENERAL OFFICES: Redwood City, Calif. • SALES OFFICES: Chicago; Cleveland; Dallas; Detroit; Milwaukee; Newark; Wichita • PLANTS: Redwood City, Downey, Long Beach, Calif.; Van Wert, Ohio
PRODUCTS: Oil, Fluid and Grease Seals, Airtron Ducts, O-Rings, Silicone parts, Shims.



Original and replacement equipment on cars, trucks, buses, tractors, agricultural and earth-moving equipment, appliances, railway equipment, machinery.

--- CLOSER THAN WE THINK! *by Radebaugh*

DRIVE-IN SUPER SUPERMARKET

The drive-in idea is combined with electronic operations in the supermarket of the future. Convenience and speed mark this easy way to bring home tomorrow's bacon.

Here's how it will work: Drive into any open car slot. There you'll see the day's bargains displayed on moving television screens and bulletin boards. Use pushbuttons to place your order, which will be filled automatically from elevator bin towers. Then drive forward to the delivery area to pay your electronically computed bill while your order is being loaded into the luggage compartment of your car.



'CALL A SERVICE MAN'

This Cry Will
Still Be Heard
in Year 2000

By Evelyn Zemke

CALL A SERVICE MAN," my husband always says, when one of our appliances refuses to function.

Sounds simple enough, doesn't it? Well, it is. At the very worst, probably only the washer, dryer, dishwasher, and TV would give up on one day. But what about the housewife of the future—say of the year 2000, when the electronic era will be at its peak?

I can just picture myself in her place—ready to start another care-free day sitting around reading a science fiction thriller while the gadgets do all the work. Already the electronic brain in my kitchen is busy preparing and serving breakfast.

My husband, arriving at the table, exclaims, "Pizza? For breakfast?"

"I pushed the button labeled BACON AND EGGS, but—"

"There's a wire crossed somewhere. Call a service man."

"Maybe the wires are reversed. If I push PIZZA, I might get bacon and eggs."

"Sure, Mom," my son agrees. "Try it."

A few moments later my daughter asks, "Who'd ever have thought of serving liver sausage sandwiches for breakfast?"

The last words my husband utters before departing for the office are, "Call a service man."

After doing so, I dispose of the garbage in the electronic disposal unit and pile the dishes in the ultra-sonic dishwasher. Then, after pushing the button which starts the electronic vacuum cleaner, I go out to the garage to set the timer for our radar controlled lawnmower.

"Ki-yi-yi!" Sounds like Fifi, our pet poodle.

My daughter, standing in the doorway, calls, "Mom! The cleaner is vacuuming Fifi!"

By the time I'm back in the house, the cleaner, having finished its job on Fifi, has scooted back to its cubbyhole in the baseboard.

"I think," my daughter says, "you'd better call a service man."

The vidiphone (telephone combined with television) signals for attention. A neighbor's face comes into view. Scowling, she says, "Your lawnmower is cutting all the flowers in my garden!"

"O, dear! Something must be wrong with its radar eye!"

"Yes," my neighbor agrees. "It needs glasses!"

I call a service man. It seems the logical thing to do. Afterwards, I sink into a chair and pick up a book.

A door slams and my son comes in, announcing, "I'm hungry."

"I'll get something," my daughter volunteers. (That's what's so wonderful about the pushbutton age—everyone is so willing to help with the work.) "We'll have peanut butter and jelly sandwiches," she proclaims, pushing a button.

We wait, nervously, while the electronic-brain goes to work.

Guess what—peanut butter and jelly sandwiches! Only, instead of serving them on plates, the electronic brain tosses the sandwiches upward. They land on the ceiling.

For lunch we eat scrambled eggs, prepared manually. Following lunch, still a bit unnerved by the sight of peanut butter and jelly sandwiches sticking to the ceiling, I accidentally dump garbage in the dishwasher and dispose of the dishes in the garbage disposal unit.

Obviously, the wisest plan—at least for the remainder of the afternoon—is to sit down and read that science fiction thriller. However, as little things continue to go wrong all day, I am kept busy calling service men. Consequently, when my husband comes home that evening, the place is swarming with them.

"It's late," my husband says, glancing at his watch. "Maybe we'd better invite them to stay for dinner."

Seeking to ease the strain on the weekly food budget, I decide to select something economical. Beef stew seems a wise choice. "Let's see," I murmur while pressing a button, "we'll need 24 servings."

The electronic brain comes up with 48 servings of beef stew. Some are on plates, some aren't.

Automatically my husband says, "Call a service man."

"How can I?" I shout hysterically. "They're all here."

Chicago Sunday Tribune MAGAZINE

The advertisement at left ran in the April, 1953 issue of Fortune magazine and was illustrated by Arthur Radebaugh, creator of the Closer Than We Think series. The strip above is the August 17, 1958 edition of Radebaugh's Closer Than We Think. The article below by Evelyn Zemke ran in the September 13, 1959 issue of the Chicago Tribune.



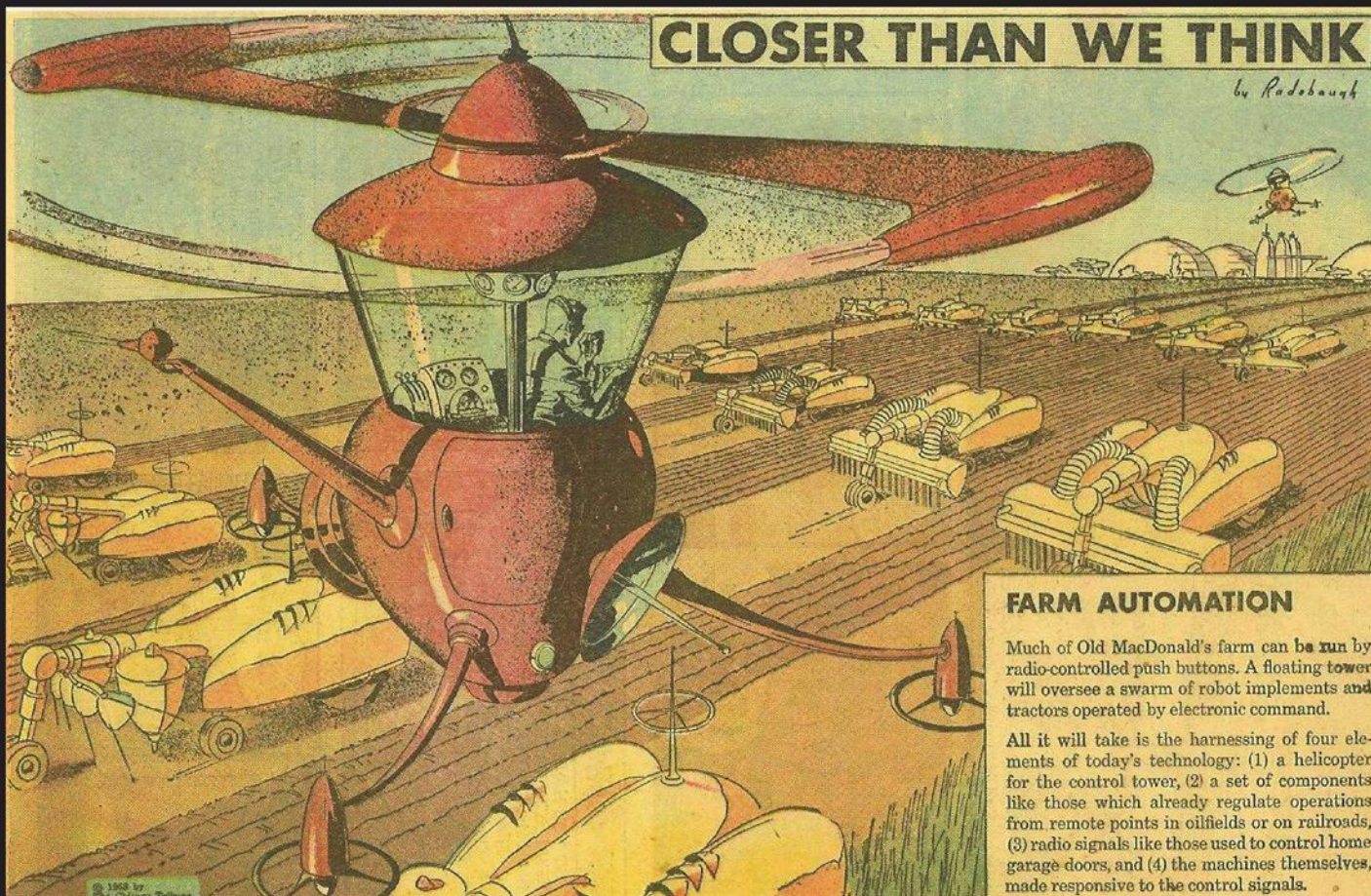
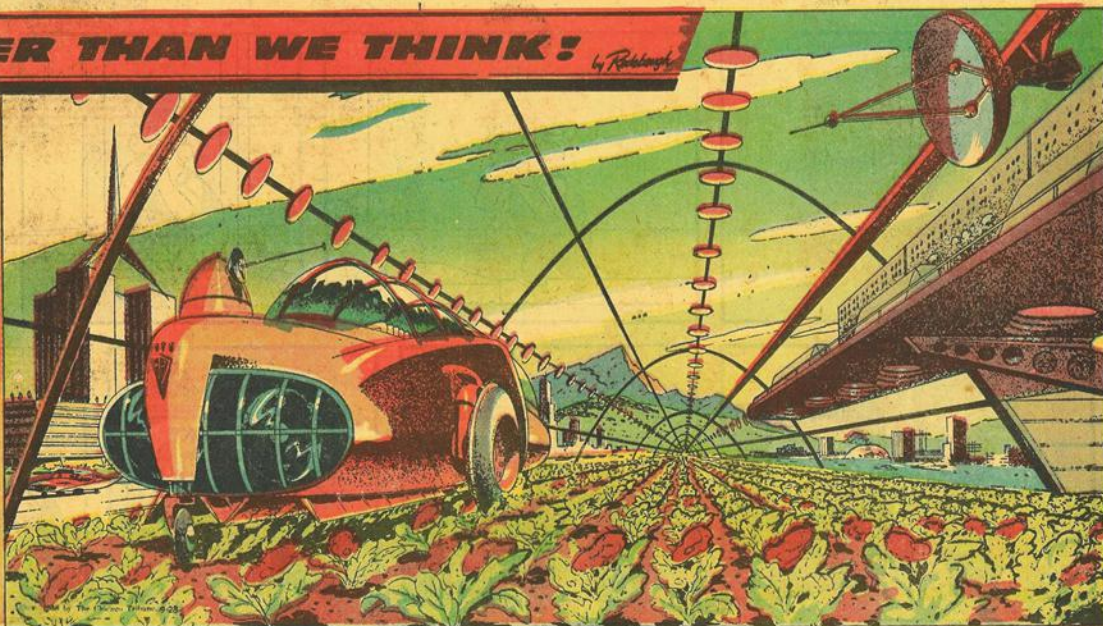
--- CLOSER THAN WE THINK! *by Rodabaugh*

FAT PLANTS AND MEAT BEETS

There will be less grazing land in tomorrow's crowded world, so beefsteaks may have to be replaced by extracted vegetable proteins flavored with synthetics that taste like real meat.

According to Cal Tech biologist James Bonner, new varieties of plants, rich in fats and edible proteins will be developed. Interest in this idea is already evidenced at the Michigan Agricultural Board where plans for a "phytotron"—or ultra-controlled greenhouse—are under way. This equipment will facilitate the study of plant characteristics and show how to modify them.

Bonner also predicted at a recent Seagram scientific symposium that future farms could be operated by tapes fed through master computer panels.



CLOSER THAN WE THINK

by Rodabaugh

FARM AUTOMATION

Much of Old MacDonald's farm can be run by radio-controlled push buttons. A floating tower will oversee a swarm of robot implements and tractors operated by electronic command.

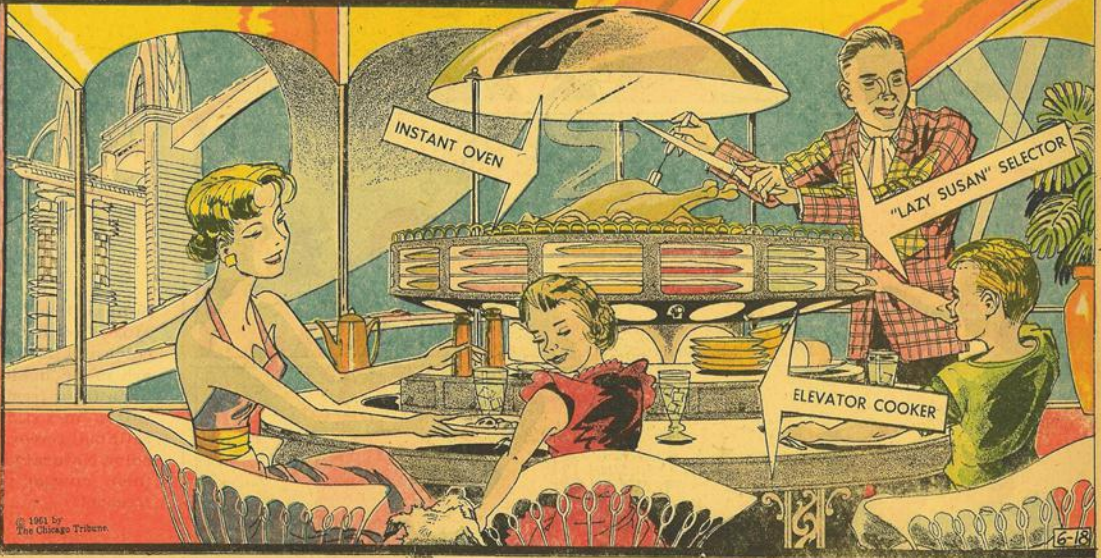
All it will take is the harnessing of four elements of today's technology: (1) a helicopter for the control tower, (2) a set of components like those which already regulate operations from remote points in oilfields or on railroads, (3) radio signals like those used to control home garage doors, and (4) the machines themselves, made responsive to the control signals.

-- CLOSER THAN WE THINK!

INSTANT COOKERS

Look, Ma—no kitchen! Be prepared for the day when cooking will be done right at the table, practically in an instant, using electronically-generated heat waves. Microwave cooking is already being tested in big industrial cafeterias. A raw potato is baked in three minutes and precooked food warmed in less than fifteen seconds.

So, for the future you'll buy all kinds of precooked foods at the grocery, maybe store them in compartments right inside the dining table, "bring them up for a look" when the family sits down, then select the menu on the spot and cook it in a trice. The old saw about "slaving over a hot stove all day" will be as obsolete as the dodo bird.



© 1961 by The Chicago Tribune

16-18

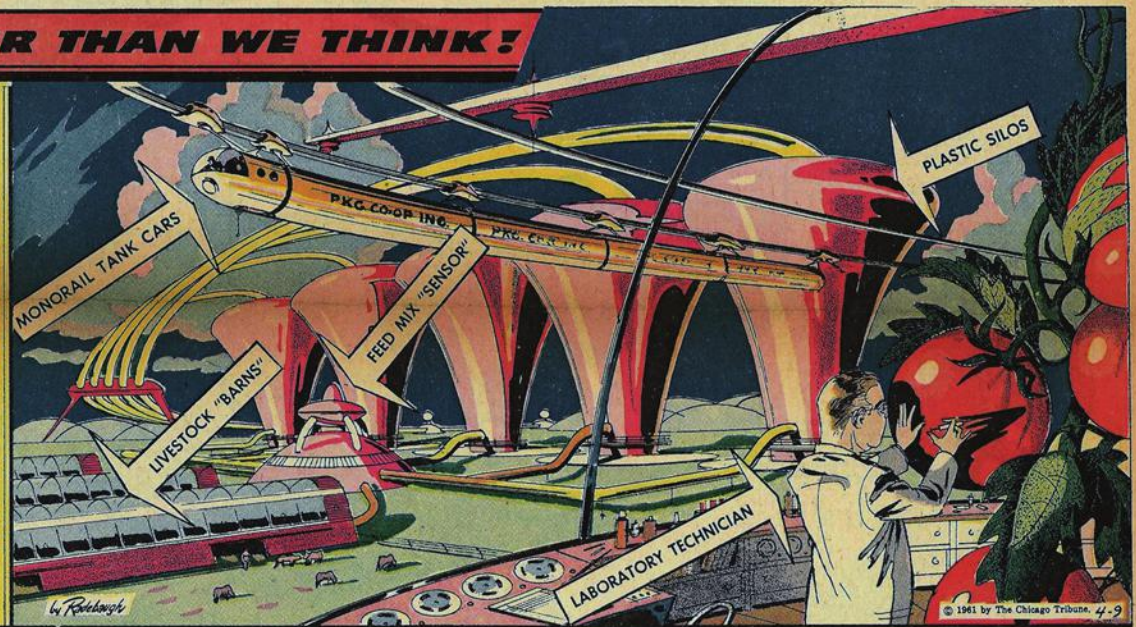
-- CLOSER THAN WE THINK!

"FACTORY" FARMS

Agriculture in the world of tomorrow will be so mechanized that farms will actually resemble factories. Crops and livestock will be raised on regular schedules under uniform and carefully controlled conditions.

"Sensors," those automatic control devices for today's wonder machines, will be adapted to the requirements of precision agriculture. They will take the place of human judgment in deciding and reacting to soil conditions, crop maturity, moisture levels, weather forecasting, feeding needs, etc. Bendix researcher W. E. Kock has reported that instruments to do this already exist or will soon be developed.

The final part of the job for tomorrow's farms will involve the packaging of the grown foodstuffs and their shipment to market—accomplished just as automatically as the growing itself.



by Radebaugh

© 1961 by The Chicago Tribune, 4-9

From 1958 until 1963 Arthur Radebaugh illustrated a Sunday comic for the Chicago Tribune titled Closer Than We Think. It was syndicated in newspapers throughout the United States and Canada and often depicted the innovations we would see both on the farm and in the kitchen. Color panels generously provided by Tom Zmudzinski.



THE KITCHEN OF TOMORROW

The “Kitchen of Tomorrow” that does everything but put out the cat at night now makes its debut.

It eliminates pots and pans.

It does away with stooping and squatting.

Sore feet will be only a memory of the sad past—because in this kitchen three-quarters of the “little woman’s” work can be done while comfortably seated.

Dishwashing becomes a pleasure and burnt fingers practically impossible to acquire.

And, in the vernacular—that is not the half of it!

Between meal times and without the help of a magic wand the kitchen can almost instantly be transformed into a gaily-decorated play-room for the children.

In the evening, it changes into a buffet bar.

With a minimum of effort it converts to extra living space—with all of the familiar kitchen “gadgets” and appliances buried from sight.

Designed by the Libbey-Owens-Ford Glass Company to help point the way toward more practical and gracious living in the post-war era, the kitchen has an “all this and heaven, too” theme developed by the use of easily obtained and familiar materials worked into new

shapes and forms.

Sliding panels cover the sink, cooking unit and automatic food mixer, so when not in use these units become part of a long buffet—ready for use as a study bench for the children or a bar for dad.



An “out of this world” refrigerator of glass construction has four times the capacity of today’s model. Built on the principle of the cold storage locker, it is separated into compartments, each with an individual temperature control. One compartment shelf revolves—so that salads and often-used foods can be placed in it from the kitchen side and removed from the adjoining dining alcove.

The oven has a sliding, heat-tempered glass hood. When the roast is revolving on the motor-driven spit mother can look at it from all angles—and without opening the oven door as of old.

Most of the cooking is done in evolutionary unit one-third the size of the average stove and with built-in pots and pans which double as serving dishes.

All of the kitchen equipment has been raised to an easy working

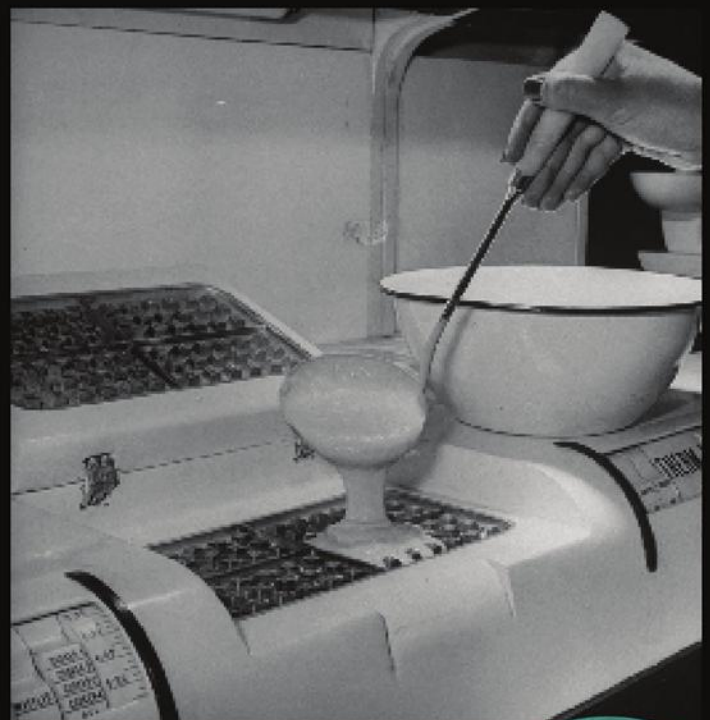
level and the space ordinarily cluttered with storage bins and cabinets has been left free to provide room for the housewife’s knees.

Storage cabinets gain a new grace by being hung on the wall and equipped with sliding glass doors—no bumped heads!

And not overlooking a thing, H. Creston Doner, designer of the

kitchen, turned out a model dining alcove, as a “running mate” for the kitchen. He pointed out that, other than making the ideas of his department available to other designers and manufacturers, his firm’s sole interest is to demonstrate some of the decorative and utilitarian advantages of glass.

So that it, too, may be used for extra living space, the dining room sports a plate glass-topped table that folds back against the wall and becomes a mural—the folding legs forming a frame to the sand-blasted design in the glass.



The article at left appeared in the July 16, 1943 Uniontown Morning Herald (Uniontown, PA). The photos are from a 1943 issue of Life Magazine.





estimable lady, that she was cured
r. Greene's Nervura blood and nerve
ly.

s a wonderful tribute to the great
of this medicine in curing disease.
is a large class of people who, while
actly sick, suffer from extreme ner-
es, feel weak and tired, with dull feel-
ead and no inclination to take hold of
work.

all such we would recommend Dr.
e's Nervura blood and nerve remedy,
will certainly give strong nerves and
ous bodies—in fact will make you
g and well.

s medicine is recommended by all
rs. It is not a patent medicine, but
escription of the most successful liv-
pecialist in curing nervous and chronic
es, Dr. Greene, of 35 West 14th St.,
York City. He has the largest prac-
the world, and this grand medical
ery is the result of his vast experience.
reat reputation of Dr. Greene is a
ntee that this medicine will cure, and
ct that he can be consulted by anyone
time free of charge, personally or by
gives absolute assurance of the ben-
action of this wonderful medicine.

List of Advertised Letters.

Residing in Warren, Pa., Postoffice
7, 1894.

LADIES

Shlow Mrs Sarah B Knapp Miss Belle
er Mrs Elvira Peterson Miss Oliwie
Palmer Lota
GENTLEMEN

Harry
IER
Warren
D Byron
as N
Henry C
Joe
k S W
J Aug
y L

Logan I C
Laderty H I
Laufenburger dhrst
Loroy William
Miss D K
W C



WARD—NASH.—At Goodwill Hill, Pa.,
10, 1894, at residence of the bride's parents

in it, and so on.
The case was given to the jury on
Thursday morning after having taken up
over two days time. The jury was out 24
hours and returned with a verdict of \$700
for plaintiff.

THE FOOD OF THE FUTURE.

Not Unlikely That It May All Be Made
by Chemical Processes.

"Do you mean to predict that all our
milk, eggs, meat and flour will in the
future be made in factories?"

"Why not, if it proves cheaper and
better to make the same materials than
to grow them? The first steps, and you
know that it is always the first step
that costs, have already been taken. It
is many years, you must remember,
since I first succeeded in making fat di-
rect from its elements. I do not say that
we shall give you artificial beefsteaks at
once, nor do I say that we shall ever
give you the beefsteak as we now obtain
and cook it. We shall give you the
same identical food, however, chemical-
ly, digestively and nutritively speaking.
Its form will differ, because it will
probably be a tablet. But it will be a
tablet of any color and shape that is de-
sired, and will, I think, entirely satisfy
the epicurean senses of the future, for
you must remember that the beefsteak
of today is not the most perfect of pic-
tures either in color or composition."

"Tea and coffee could now be made
artificially," continued the professor,
"if the necessity should arise, or the
commercial opportunity, through the
necessary supplementary mechanical in-
ventions, had been reached."

"And what about tobacco?"

"The essential principle of tobacco,
as you know, is nicotine. We have ob-
tained pure nicotine, whose chemical
constitution is perfectly understood, by
treating salomine, a natural glucoside,
with hydrogen. Synthetic chemistry has
not made nicotine directly as yet, but it
has very nearly reached it, and the la-
boratory manufacture of nicotine may
fairly be expected at any time. Conine,
the poisonous principle of hemlock, has
been made synthetically, and it is so
close in its constitution to nicotine and
so clearly of the same class that only
its transformation into nicotine remains
to be mastered, a problem which is not
very difficult when compared with oth-
ers which have been solved. The parent
compound from which the nicotine of
commerce will be made exists largely in
coal tar."—From an Interview With
Professor Berthelot, the French Chemist,
in McClure's Magazine.



Bed Wetting in children, Dropsy, Heart
Disease, Rheumatism, Skin and Blood
Diseases, Swelled Limbs, Bright's Dis-
ease, Impotency, etc.
Satisfaction guaranteed. Sample free.

Dr. Fenner's Pellets cure Sick Headaches,
Constipation, etc. The best Family Physic.

Dr. Fenner's German Eye-Salve cures
Sore Eyes, Cracked Lips, Piles, Skin Eruptions.

Dr. Fenner's Cough Honey.
Relieves any cough, asthma, etc., in an hour.

Dr. Fenner's Golden Relief. A specific
in any inflammation. Relieves burns, tooth-
ache, neuralgia, rheumatism, or any pain in
1 to 30 minutes. Cures colic, dyspepsia, dysen-
tery and flux; also bronchitis and consump-
tion. One dose cures LaGrippe.

MORE BARGAINS

—THAN ANY—

Dry . . . Goods House

IN WARREN.

Best Selected Stock!

Everything New!

Lowest Prices!

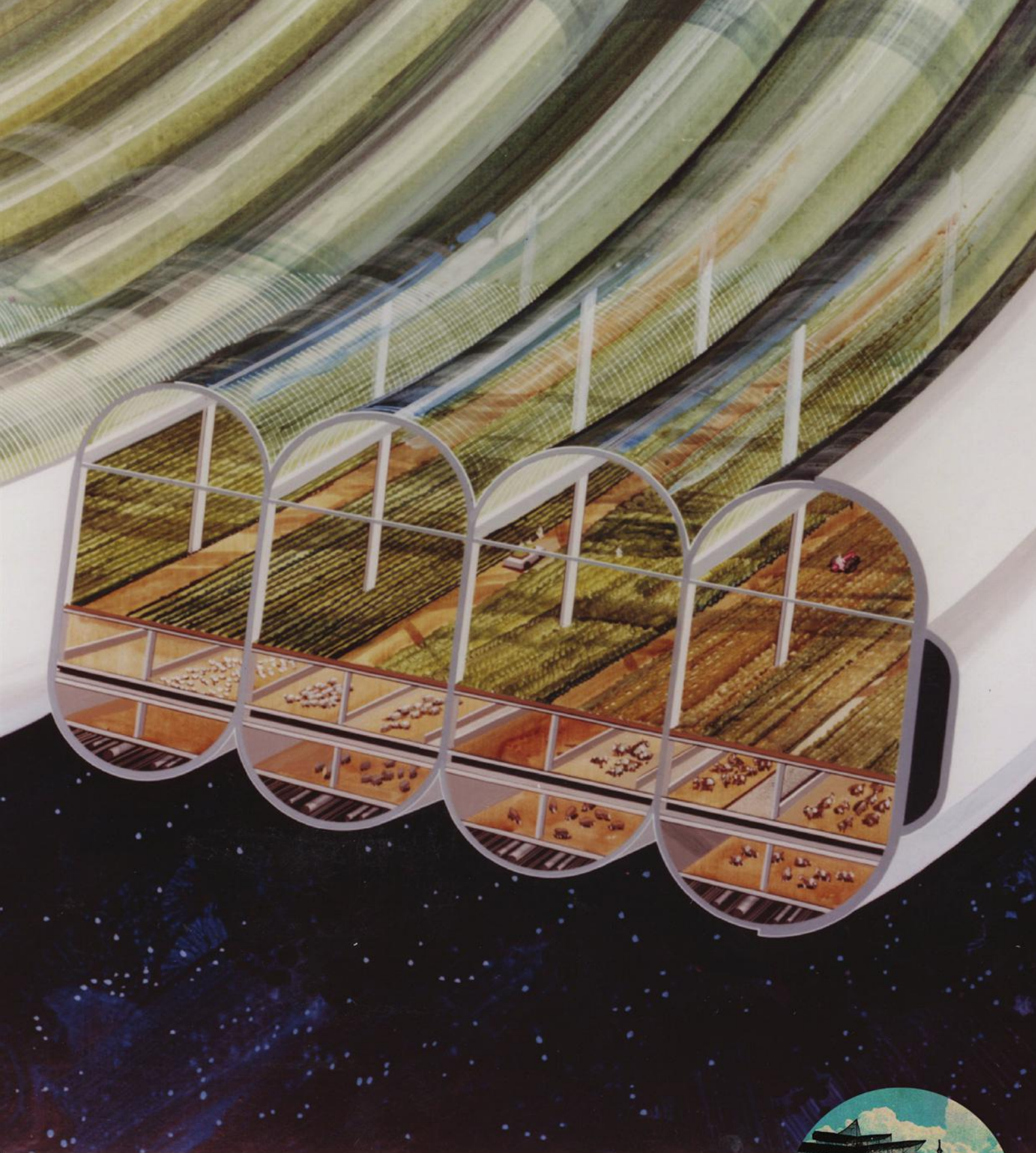
All the newest novelties in DRESS
GOODS generally in dress lengths
A splendid assortment at 45c,
others ask 50c. Special new things
at 97c, worth \$1.25, and a gem for
14c 36 inches wide, worth 20c.

To-day we place on SALE the best
values ever shown in our town in
TABLE LINENS. One lot Tur-
key Red, full width, at 20c, worth
25c. One lot special (20 pieces)
fancy colors, all over the country
selling at 50c, our price on 37c,
white German Linen at 38c, worth
50c. Towels and Napkins, Table
Spreads, &c.

Dress Ginghams 5c, others ask 7c and
8c. Apron Ginghams, 5c, others
ask 7c. Light colors Calicos, 3½c
worth 5c.

Special . . .

RO
Our m
Desk
now re
Cases
BANK
Catalog
TY
W
IND
Cleans
Cup
and gi
SM
TO
S
W. F. M
Br
E. H.
and No
ings Bu
Speci
survey
G SM
of every
goods.
street, a
S T. N
S
Office
dry goo
streets.
HOT
Sixty
for tri
A. C.
R. W. S



In the 1970s the NASA Ames Research Center commissioned artist Don Davis for a number of paintings imagining space colonies of the future. The painting above is a cutaway showing the agricultural module of a Bernal Sphere. The article at left appeared in the October 19, 1894 Warren Ledger (Warren, PA).



WHAT MAY HAPPEN IN THE NEXT HUNDRED YEARS

By JOHN ELFRETH WATKINS, JR.



Strawberries as Large as Apples will be eaten by our great-great-grandchildren for their Christmas dinners a hundred years hence. Raspberries and blackberries will be as large. One will suffice for the fruit course of each person. Strawberries and cranberries will be grown upon tall bushes. Cranberries, gooseberries and currants will be as large as oranges. One cantaloup will supply an entire family. Melons, cherries, grapes, plums, apples, pears, peaches and all berries will be seedless. Figs will be cultivated over the entire United States.



In the December, 1900 issue of Ladies' Home Journal John Elfreth Watkins, Jr. made a number of predictions about the technological advancements Americans would see in the 20th century. Below that is an illustration of the robot helper of tomorrow from the 1981 book Tomorrow's Home by Neil Ardley.



In the community home of the future there will be no cooks to battle with, for everything will be cooked in the general kitchen. All the housewife of tomorrow will have to do is select the kind of meal she wishes and order it, just as she now phones the butcher for a roast or fowl

A golden age of agriculture – providing greater economic security for farmers and better eating for consumers – may become a major accomplishment of the last half of the 20th century.

Giving support to the possibility of attaining this goal is the remarkable progress made in agriculture during the first half of the century. At the start of the century it required the efforts of two-fifths of the nation's population to supply the demand for farm products. Today – at the century's half-way mark – it takes only one-fifth of the population.

What has made it possible has been largely the work of science – new and better farm machinery and biology.

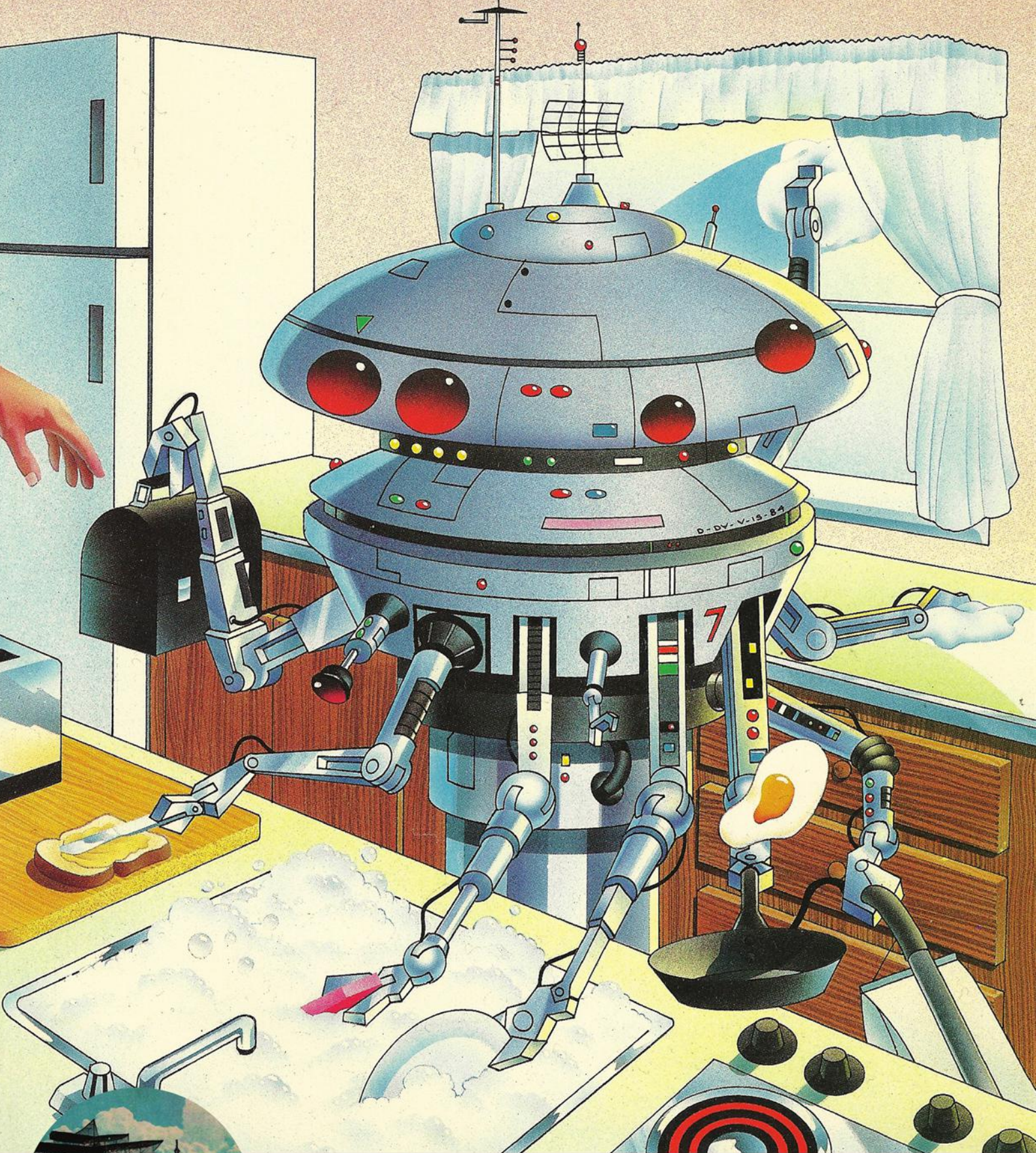
Foreseeing a national population of 200,000,000 by the end of the century, these leaders predict less than one-tenth of the people will be needed to supply markets for farm products.

Through the extended use of better plants and animals, improved fertilizers, new growth regulators and more efficient machinery, it should be possible, leaders say, for farmers to produce future crop needs on much less land than today.

A major byproduct of the expected need for fewer farmers and for possible new scientific developments, leaders say, should be greater ability to stabilize agricultural production and supplies at levels which would provide and maintain greater security for those on the land.

Above, the "housewife of tomorrow" from the January 18, 1925 Times Signal (Zanesville, OH). Below that, the "golden age of agriculture" from the December 27, 1950 Robensonian (Lumberton, NC).





The robot illustration above by Vern Groff is from the cover of the 1984 book *If I Had A Robot: What To Expect From the Personal Robot* by Nelson B. Winkless III. The following pages feature ads from the mid-1950s for New Departure Ball Bearings generously provided by the Modern Mechanix Blog: <http://blog.modernmechanix.com/>

NEW

DEPARTURES OF TOMORROW



*Super Chef
-1965?*

TOMORROW: Pick your favorite foods! Then this imaginary SUPER CHEF assembles your choice from a vast freezer storage, cooks it to perfection by infra-red ray and serves it by conveyor in a matter of seconds!

Set the table . . . then set the dial! Future meals could be as easy as that with this miracle meal-getter. And, maybe tomorrow it will be a reality.

When it is, New Departure will play an important part, just as it does in so many of today's work-savers. For example, you'll find New Departure ball bearings in almost every major appliance . . . and for good reason. They keep moving parts functioning smoothly, while requiring virtually no maintenance. They support loads from any direction . . . keep parts always in perfect alignment.

If you're dreaming up tomorrow's time-saver, or improving your present product, call on New Departure for the most dependable ball bearings in the world.

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT



TODAY: The operation of many of today's conveniences relies on New Departures. Specially designed, low-cost New Departure ball bearings in the hinges of this heavy refrigerator door make it swing open at the lightest touch.

NEW DEPARTURE
BALL BEARINGS



NOTHING ROLLS LIKE A BALL

NEW

DEPARTURES OF TOMORROW

Drive-in Market 1959?



TOMORROW: Choose items from the monitor screen; electronic impulses select, assemble, deliver your order, total your bill and return your change.

A week's shopping in minutes! And you haven't moved from your car. It's that simple at the Drive-In Market of tomorrow. **Just select your items from the monitor screen; electronic impulses select, assemble, deliver your order, total your bill and return your change.**

It's just a dream away! And when it takes shape, look for New Departure to provide the proper bearings to keep all moving parts functioning smoothly. New Departure ball bearings keep parts in perfect alignment, support loads from any angle and require little or no maintenance.

If you're nursing a new idea involving moving parts, call on New Departure for top quality bearings and thorough engineering service.

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT



TODAY: New Departure ball bearings in today's business machines keep intricate moving parts functioning smoothly, quietly within precision tolerances. Accuracy is maintained even after long use.



NEW DEPARTURE

BALL BEARINGS



NOTHING ROLLS LIKE A BALL

NEW

DEPARTURES OF TOMORROW

Bake-O-Mat 1960?



TOMORROW: Breads and pastries . . . mixed, baked, sliced, wrapped at your door!

Place your order at your door. In seconds, Bake-O-Mat mixes and processes the ingredients, electronically bakes, slices, and wraps any of a wide variety of hot breads and pastries—as you watch!

When? 1960? Could be! But, one thing is sure. Then, as now, New Departure ball bearings will reduce costs by simplifying machine design . . . increase customer satisfaction with added product dependability.

If you're "cooking up" a new machine—or improving a present one—New Departure's engineering service provides the right bearings for you!

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT



TODAY: New Departure's sealed and lubricated-for-life ball bearings used in bakery machinery assure freedom from production-line delays and food contamination from lubricant leakage.



NEW DEPARTURE

BALL BEARINGS



NOTHING ROLLS LIKE A BALL

That Synthetic Food of the Future



Week's Wash

PRODUCE TWO MILLION VOLTS

Brilliant Display As Electricity Arcs Across 20 Foot Space

STANFORD UNIVERSITY

ONE-LINE LEW SAYS

Some of us don't get any farther

HEROLD New York Trib-
Inc.
nothing pleases me
missing the first two
days' reports of a new
murder. After that there is no
use trying to catch up with it.

er
cans

Crowds
to Keep
or Starva-

he eye could
small squares of
by little stone
and hundreds of
miles of walls.
the smallest
rid-walled to
Since most of
and the flinty
arsely populat-
under what had
patient hands
these little walls
rain falls on the

SCENE
discover that the
doing this, over
0 years. There
ing about these
atches of walled
evolution of the
stence, entailed
neration; farm-
iggardly rains:
ers nearer and
but never ceas-
stone walls and
est a starvation
sad, as depress-
g a bit of coun-
the planet.

OMPANY
COURT

Interests Ask
Against
Firms

an injunction to
proper Irrigation
er canal, coming
ing water from
and middle
d in the
y the
y. take
pose
ing
ing
d
mpa
aim
two s
the
is na
ication
rected as
a water from
forks.
application prays
ginner and wafer

The

Monday
Da
—See
your
goes!
means,
these
tomor

b
better qu
teen bloc
all want
shades.

b
yellow, l
bleach by
stitched,
embroider

lin
pure, lin
x54, sta
embroid

ce
36-inch o
clover
stamped
embroider

t
card, ta
printed
to be
broider

oil
oil cloth
inches,
terns, a
designs.

c
choos
tion, o
49c ne



to July 1st.
It is my opinion they will pay practically all of the pensioners at least a small pension between now and November 3rd without their back pay.

Several hundred people have been employed in various ways to look after sales tax and old age pensions.

In October, 1934, just before the 1934 election, Forrest Smith, the state auditor employed 112 temporary clerks for two weeks paying them each \$70 out of sales tax. I leave it to you to guess what their duties were.

Now I find that they are going to divide the state into 14 old age pension districts with one supervisor for each district and one case worker for each county. That means 128 more jobs for the faithful Democrats at the expense of the old age pensioner.

a concrete proposition, understandable by everyone, has led inevitably to confusion and questioning.

It is a further illustration of the complexity of the case that when they are pinned down to it, and asked to state exactly for what they are battling, both sides reply in identic phrase: "For the preservation of liberty."

The difference is that Mr. Landon means liberty from what he describes as a meddling government at Washington, and Mr. Roosevelt means liberty from the domination of what he calls "the economic royalists."

But how is the average voter going to work himself into a high degree of hysteria over a paramount issue which has to be stated with parentheses within parentheses, and accompanied by a diagram?

Pills Will Never be a Meal, Dietitic Authority Declares

KANSAS CITY, Oct. 6—(AP)—Alack and alas, the hard working housewife must give up her dream of dispensing with a four-course meal by simply feeding hubby a concentrated food pill—it can't be done, an authority said today.

The calory factor will necessitate continued operation of America's kitchens, explained Dr Milton A. Bridges, assistant clinical professor of medicine at Columbia university and dietitics authority.

"Human beings never are going to eat pills for meals," said Dr. Bridges, emphatically. "Pills can never be made to contain sufficient caloric volume."

Caloric volume, the quantity of calories, is a factor of daily diet that must be kept up to quota, Dr. Bridges explained.

"It is perfectly plausible to supply all the vitamins and minerals needed for a meal in pill form.

But you can't get calories except by eating foods.

"And you'd have to eat the same foods we eat now to get those calories," added Dr. Bridges.

These foods, if the diet is properly balanced, will provide the other necessary elements at the same time, Dr. Bridges declared, making the pills just so much surplusage, as far as the normal appetite is concerned.

Dr. Bridges is attending the annual fall conference of the Southwest Clinical Society.

COMMERCIAL APPEAL TO SCRIPPS-HOWARD

MEMPHIS, Tenn., Oct. 6—(AP)—The Commercial Appeal, one of the oldest and largest newspapers in the south, today became a part of the Scripps-Ho newspaper chain.



The cartoon at left ran in the September 19, 1926 Ogden Standard-Examiner (Ogden, UT). The article above appeared in the October 6, 1936 Jefferson City Post-Tribune (Jefferson City, MO).

OUR NEW AGE

By Athelstan Spilhaus and Earl Cros

OUR SUNSHINE FOOD FUEL comes to us second hand from plants, and at third hand or more when we eat animal protein. Each step successively wastes at least nine-tenths of the food fuel.

In one way or another, *all* our food comes from plants. Only these "chemical factories" can combine lifeless hydrogen, carbon, nitrogen and oxygen with the sun's energy and produce living matter!

Already, overcrowded Japan eats, and enjoys, many kinds of seaweed—"the grass of the sea"—which converts sunshine into food in the surrounding waters.

We eat seaweed products too, in salad dressing, candy, jellies and ice cream.

As population increases, and the earth becomes crowded, we will farm rivers, lakes, and even oceans for crops of algae, seaweed and plankton!

ALGAE PROCESSING CORP.
NEXT NUTRITION RESEARCH
NEPTUNE'S SNACK RESTAURANT
PLANKTONBURGERS 1959



The Our New Age comic above by Athelstan Spilhaus appeared in the August 9, 1959 Post-Standard (Syracuse, NY). Below that is a Frigidaire advertisement from 1957. The article at right is from the March 27, 1931 Lima News (Lima, OH).

FLOOD CONTROL PROVIDES JOBS TO THOUSANDS

100,000,000 Spent So Far In Curbing Damaging Rush of Mississippi

LEVEES MADE STRONGER

Our Around New Orleans To Carry Off Excessive Waters

WASHINGTON, March 30.—The gigantic job of protecting the Mississippi's banks against the flood has proved a boon to employment, thanks to a prolonged fight against the forces of workers on the government's flood control project have been kept at work. The lack of rain has held the water at low level, says Col. Ernest C. Bland, member of the Mississippi flood commission.

Many engineers have set out to repair the Mississippi once and for all, and the task of course has not been out of thousands who otherwise be out of jobs.

100,000 SPENT

Some are employed by contractors building levees, sinking protective mats of concrete and dredging channels. Others benefit indirectly from orders for material in the flood control work. Engineers under Maj.-Gen. Lytle are in charge.

More than \$100,000,000 has been spent for wages and materials out of the \$225,000,000 assigned for flood control after the disastrous winter of 1927.

Over a billion cubic yards of earth were placed in the levees. Before the job is finished, a billion cubic yards of earth will be moved, twice as much as was moved in building the Panama canal.

Engineers are not planning to restrict the Mississippi strictly within its narrow limits of flood levees, however. When it goes beyond the levees, the river will be allowed to spread—but only where engineers want it to spread.

Instead of threatening the streets of New Orleans, the river will be "tamed" around the city. The plan is to be finished late this year.

It is a gigantic spillway, large enough to carry more water than the Niagara Falls. Flood water tumbling thru it will flow directly into Lake Pontchartrain, the city, and from there to the Gulf of Mexico.

Boeuf and Atchafalaya basins, lowland areas bordering the Mississippi on the west farther from the city, also are to divert flood water if necessary. Auxiliary levees are planned to protect lands near the river.

PROTECT LEVEES

Special-designed barges are being used to lay great sheets of concrete along the levees under water, as easily as hauled in is laid on the kitchen floor.

The slabs, four feet long and four feet wide, and wired together and covered to protect the banks from erosion. Larger slabs, four feet long, are laid like shingles along the river.

More than 1,000 miles of levees are being raised, strengthened or repaired. They are about 300 feet at the bottom, 30 feet high, and taper to a width of ten feet at the top.

Often are built several feet back from the low water of the river so they will be eroded by the current, and the river more room to flow in flood time.

PRESS THE BUTTON AND MECHANICAL MAN WILL POP RIGHT UP WITH MEAL

NEW YORK. —The machine age is about to take command of the world's largest industry—the \$23,000,000,000-a-year restaurant business. Hungry patrons will push various buttons representing items on the menu, their orders will be transmitted electrically to kitchen robots which will prepare their food, deliver it, collect the bills, and carry off the dishes.

Inefficient humans will have no part in the transactions. There will be no cooks, waiters, bus boys, dishwashers or cashiers. There will be no tipping and no arguments. If there is anybody at all behind the counter it will be a modern "kitchen mechanic"—an engineer to wind an oil-can when the wheat cake machine is behind schedule, or a monkey wrench to tighten up the omelette mill.

INVENTOR BEHIND SCHEME

But far behind the scenes, concealed in his luxuriously, mechanically equipped office, will be H. Russel Brand, inventor and guiding genius of the system. All this, of course, is according to R. Russel Brand himself, who soon is to open the world's first mechanical restaurant in New York. And no matter how incredible his scheme sounds, he has the patent rights and models to prove that virtually anything is possible for the food factory of the future.



It seems there has been entirely too many processes in preparing a meal. The idea of the inventor of the new restaurant is to let machinery do all the work.

Anyway it is a dream of nearly 20 years for the gray-haired, dynamic, carelessly clad inventor. More of a scientific philosopher than a scientist, he is one of the pioneer efficiency experts, and has evolved a system called "controlology," by which he means the automatic control of industry.

"My mechanical restaurants will cut prices at least in half," explained Brand, "and when the chains of restaurants I expect to establish are served with raw materials by special distributing centers in farming regions, the prices will be even lower."

"I already have patents and machines which will cook food and deliver it thru apartment houses at the pressing of a button. Within five years New York apartment house wives will be able to do all their cooking at a keyboard of these buttons. I also am designing automatic food machines for the Russian government which will be used in community restaurants."

At present Brand has only one machine ready for his first establishment. It is a wheat cake mill which records the patrons' electrical order and the number of his secret places the batter on a revolving griddle, turns the cakes at the proper time and finally puts them on plates. These, with syrup, butter and coffee, are to cost 10 cents.

The inventor, tho, is completing a machine which will turn out two poached eggs on toast and will install it soon. Meanwhile his draughtsmen and designers are working on similar contrivances for other items on the regular bill of fare, and by next year he declares the restaurant will be completely mechanical.

Then the customer can obtain



The inventor of the Robot restaurant boasts that a mechanical arm will pour soap for the patrons.

change from a machine, take his seat, put the proper coins in slots labeled "soup," "steak," "French fried potatoes," "coffee," "apple pie"—or whatever he wants. A robot arm will ladle out his soup, which will move to a heated conveyor and eventually pop out of a little door next to his table.

Meanwhile the raw foods will have been tipped on hot griddles or into boiling grease, will be removed at just the right time (even tho the steak is to be medium, rare or well done), and sent on to the table. The coffee will be poured automatically and transported piping hot. After a reasonable interval, the selected dessert will follow.

When the patron has finished, and rises, the tray and dishes will betake themselves back to the conveyor, will be washed, stacked, dried, and sorted in the manner of matrices on a linotype machine.

It's all very complex. But then, as Brand says enthusiastically, "It will seem very simple after you see it work."

ADA MINISTER HEARD IN LIMA CHURCH TALK

"Romance of Religion" was the subject of an address by the Rev. W. L. Harmony of Ada, at a meeting of 57 men of the Bethany Lutheran church, Thursday night. Dr. A. C. Miller of Louisville, Ky., founder of the church, also spoke. Plans were made for a father and son banquet to be held within the next two weeks.

GETS ARMY DIPLOMA
COLUMBUS, O., March 27 — (AP) — Lieutenant Colonel J. Earl Ports, of Mansfield, Ohio national guard quartermaster corps, was one of 14 officers to receive diplomas today during graduation exercises at the U. S. army quartermaster corps school in Philadelphia.

6 6 6
LIQUID or TABLETS
Cure Colds, Headaches, Fever
6 6 6 SALVE
CURE'S BABY'S COLD

Closing

of present stocks still going on at our store. Dependable merchandise is being sold for less than you can miss this opportunity of getting your share of a few of the hundreds you will pick up if you

CARTER &

Women's
COATS
DRESS
ENS

Offered at extraordinary low prices of our former stocks. We are a sortment of the best looking world's greatest markets. It is best to visit our store and inspect our Spring apparel and get our prices.

Coats

Good Spring Styles

Women's Sport and Dress models in Spring weight materials with and without fur trimming. If we have your size, you will buy on sight. Values that sold at \$29.75 and up.

Closing Out Sale Price

\$9.95

Springtime

Women's Spring Suits that sold for \$29.75 and up. Wool tweeds and plain cloths. Sizes so similar to the latest fashion that you will tell the difference. CLOSING OUT



Basement Bargains | Staple Items That Will

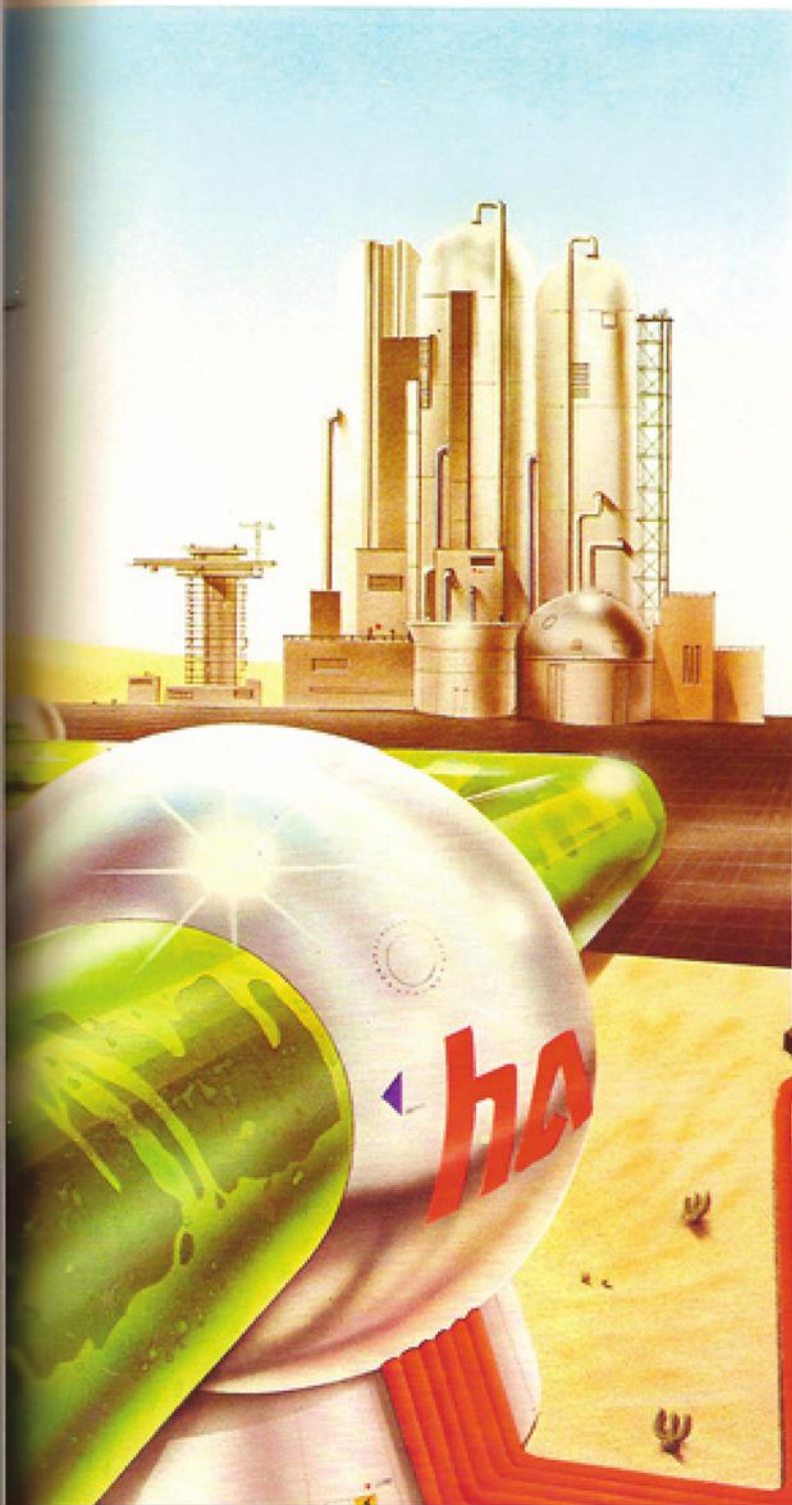
Foods of the future

Imagine a world in which no one need ever go hungry. Animals and crops can be raised on even the poorest land, and there are new kinds of plants that are very rich in food value. Even drought brings no fears, for food can be made from things that people cannot eat – things such as oil, wood and waste materials, possibly even garbage!

This is a future world that has seen the impact of an important new science called biotechnology. One of the aims of this science is to “manufacture” special kinds of plants and animals to order. It uses an amazing new technique called genetic engineering.

▽ A food factory of the future serves a desert city. Pipes bring waste liquids from industries in the city to the factory, where they are converted into foods by bacteria in tanks. Solar panels capture the Sun's rays to provide heat for the food-manufacturing processes in the factory.





Each variety of plant and animal has its own particular kind of genes, which make it live and grow in its own particular way. Genetic engineers can “snip” bits out of the genes of one living thing and place them in the genes of another, producing a new variety that is like a combination of the two. In this way, we will be able to produce new kinds of animals and plants. These will include crops that do not need fertilizers and can therefore grow on poor land, as well as combinations of crops such as beans and corn that have the food value of both. Possibly even animals and plants could be combined. In the future you may grow meat-tasting plants in the garden. Imagine pulling up a steak for dinner!

Even more amazing will be the food factories of the future. Genetic engineers will make special microbes or bacteria that will convert all kinds of unlikely materials into food. These will include waste liquids left over from industries such as paper-making and cheese-making, and perhaps materials like grass and seaweed. The new foods will be made just as tasty as today's foods.

This two page spread featuring the delicious waste liquids of the future is from the 1982 book Our Future Needs by Neil Ardley.



A FUTURIST AT THE MOVIES: SOYLENT GREEN

by JOSH CALDER

Soylent Green is the ultimate foodie science fiction movie: the food of 2022 is in short supply, weird, and us. The movie is also a rarity, as food is seldom given sustained attention in sci fi films, more often fading into the background. Filmmakers may be accidentally wise: food culture is conservative at a deep level, and many foods are older than civilization, outlasting empires and languages.

Food scarcity has driven drastic change in the 1973 movie. The world is horrifically overpopulated, and any real food, from fruit to meat, is precious and hoarded, with strawberries \$150 a jar. Hunger, crowding, and environmental degradation have frayed civilization, and society seems to be one calamity away from the collapse of Road Warrior, in which a man is happy to eat an old can of dog food.

The film reflects its time. The Population Bomb and Limits to Growth had been published a few years before, warning of dire consequences of population pressure and resource scarcity, and the first wave of environmentalism was peaking. Hunger on a global scale was widely expected.

It was not to be, in reality. The Green Revolution was transforming agriculture, massively boosting food supplies. Population growth had already slowed; population growth rates had peaked in the 1960s, and absolute population growth (millions added per year) was going to top out in less than two decades.

Feeding humanity was not possible in the world of Soylent Green, for people have “poisoned the water and polluted the soil.” Only the most basic foods can still be produced, and so we subsist on color-coded squares, yellow, red, and a new allegedly delicious green. They look unappetizing, and unnatural.

Color is the first and easiest food gimmick that moviemakers employ to denote the future: the crews of the Enterprise enjoy blue Romulan ale and mysterious plates of blue cubes, and Aunt Beru serves Luke blue bantha milk in Star Wars. Barbarella found nourishment in a purple liquid.

Future dining can be worse than weird colors: the spaceplane passengers and astronauts of 2001: A

Space Odyssey suck their meals through a straw or scrape green or brown pastes out of little trays. Food has not gotten outwardly stranger since 1973, but it is much more high-tech: most Americans eat genetically engineered food every day. (Fortunately, we did not go the Sleeper route, with man-sized chickens and bananas.)

In the end, of course, food defines the full depravity of the world of Soylent Green. It’s people, Charlton Heston informs us—soylent green is made out of people. We have paid the ultimate price for our transgressions against nature in the movie, and are turned into food ourselves.

It is a recurring theme: our descendants are meat animals for the devolved proletariat in The Time Machine (1960), and nutrients for ET hatchlings in the Alien series. (Crimes against nature get us in similar trouble in newer more recent movies too: in Deep Blue Sea, genetically engineered sharks are so advanced that they eat the cast in reverse order of attractiveness.)

In the real world, cannibalism has been mercifully rare. The North Korean totalitarian theocracy reduced its starving citizens to consuming each other in the 1990s, and may do so again. In the Congo, which has flirted with post-apocalyptic dystopia over the last 20 years, the cannibal militias had ritualistic aims.

More broadly, hunger has likely declined to its lowest level in human history, and dire poverty has declined almost everywhere.

Things remain precarious, however. Rioting broke out in many countries in 2008 as food prices spiked. Many see a looming threat in the climate-change experiment we are running on our planetary atmosphere, and we could combine global warming with a peak-oil energy shortage, which would sharply boost food costs.

If we really work at it, we could even beat the 2022 deadline. With global mono-crop agriculture, and biotech capabilities falling into the hands of individual tinkerers, we have more and more of the elements in place.

It's the year 2022...

People are still the same.

They'll do anything to
get what they need.

And they need
SOYLENT GREEN.

PLAZA I



SOYLENT GREEN

MGM Presents



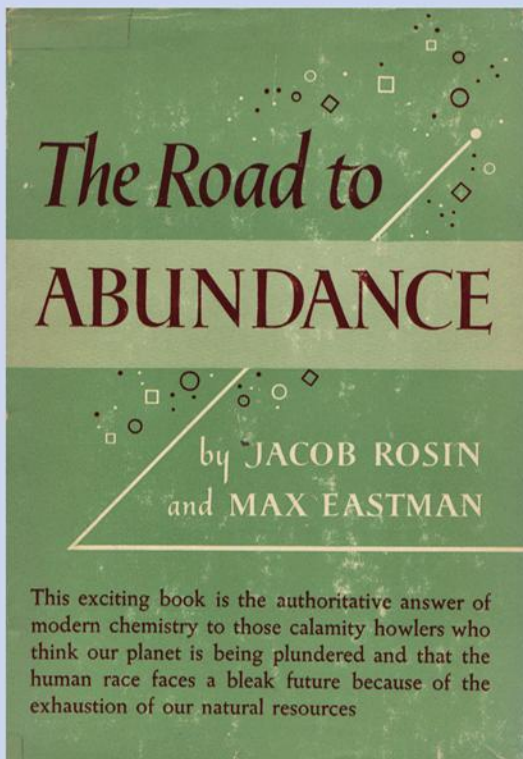
Josh Calder
<http://www.futuristmovies.com/>



MORE EFFICIENT THAN NATURE

To many people of the year 2011 the 1953 book, *The Road to Abundance*, is a heretical, nightmarish vision of the future. Chemicals and factory farming are seen as the logical next step in the evolution of food production for mankind.

Jacob Rosin, co-writing with Max Eastman, describes the eventual “victory of chemistry over agriculture,” and mankind’s “bondage to the planet.” The ultimate goal of Rosin’s ambition was to be “more efficient than nature.” In his advocacy of a completely synthetic diet Rosin called into question both the definition and the benefit of “natural foods.”

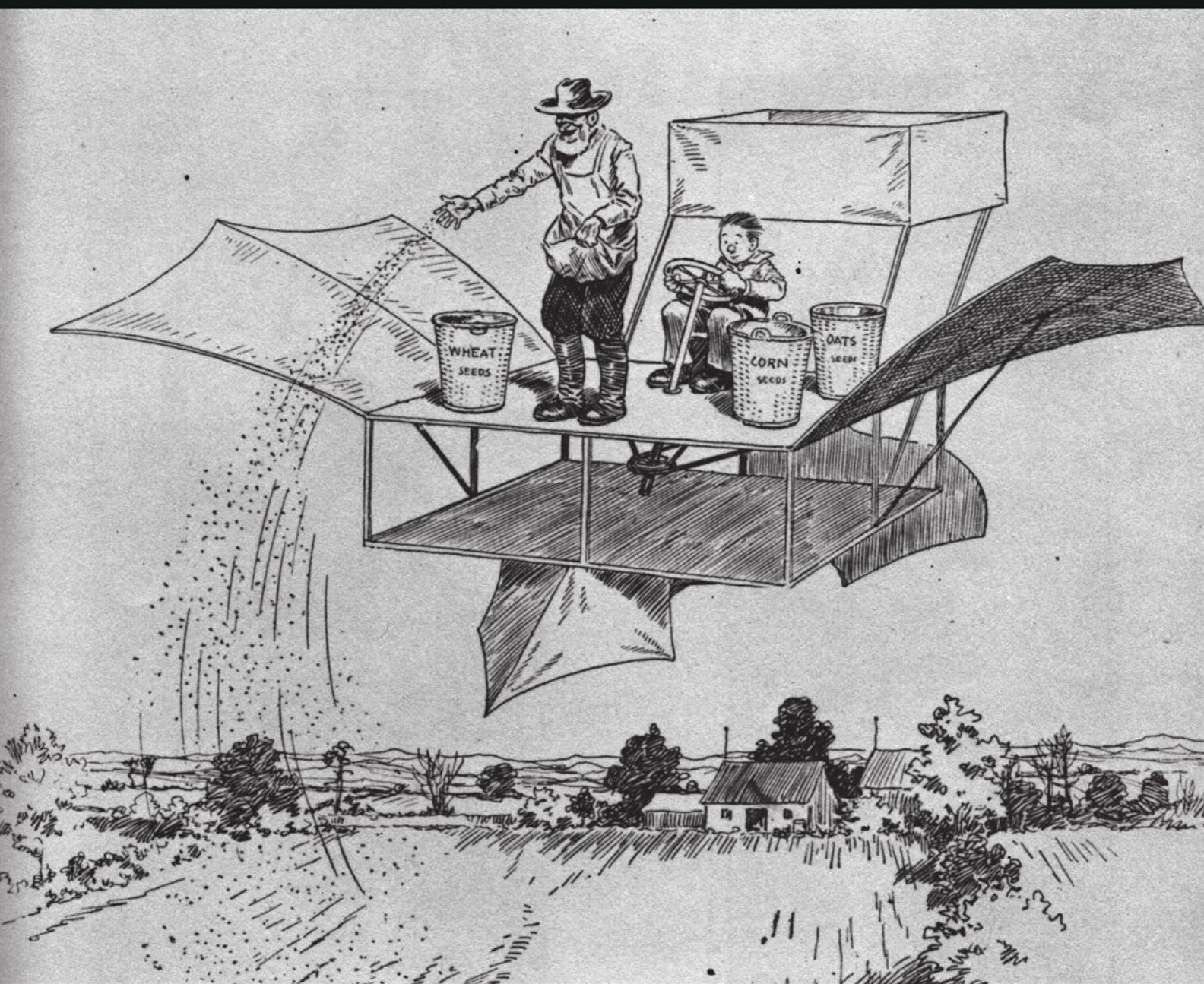


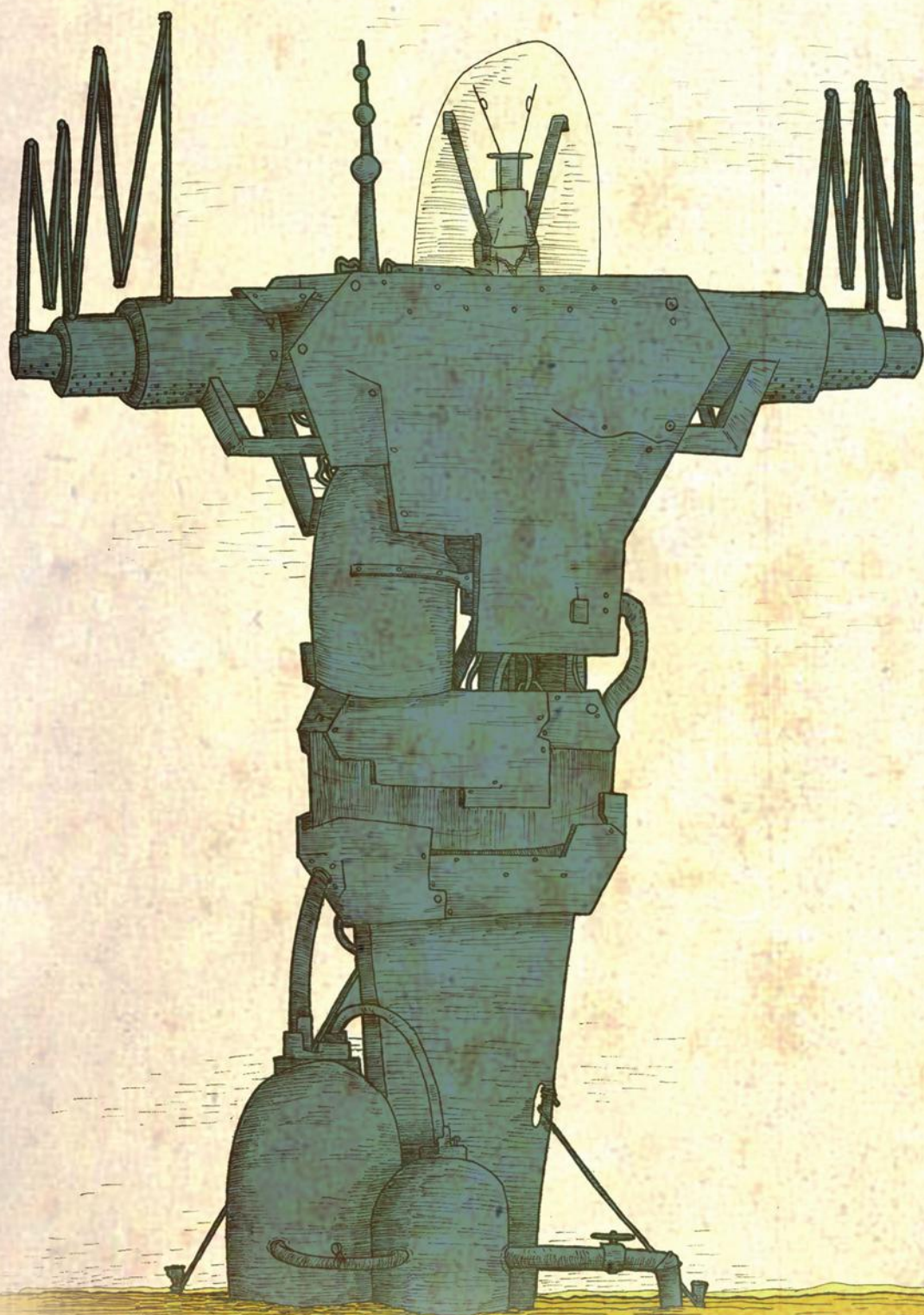
It is therefore high time to remove the cloak of holiness from natural foods, and see them as what they are: a poorly assorted mixture of chemicals containing a large amount of indigestible materials, and a certain proportion of materials injurious to our health. This mixture has been, unfortunately, indispensable for our nutrition, since we have been unable up to now to obtain the chemicals required by our organism in a form entirely digestible and devoid of poison.

Every time I read a book like *The Road to Abundance* I can’t help but imagine what the grocery stores of 2011 would look like had different marketing forces prevailed. One can picture yuppies and hipsters walking the aisles of a grocery store in some alternate universe, content in knowing that their unnatural, Certified Inorganic™ food was scientifically proven to maximize this and detoxify that. SuperPills: The All-Synthetic Food Emporium!



The illustration at right of a future farmer planting crops by aeroplane appeared in a 1909 issue of Judge magazine. The article above appeared previously on [Paleofuture.com](http://paleofuture.com)





IN THE MECHANICAL FARM

Standing alone in the middle of the field, the Farmer looks at his domains.

He wipes his oil-smeared hands in his leather apron and squints against the setting sun to watch the two Diener crisscrossing in their slow but sure way the geometrically perfect divisions of crops: the wheat stalks are growing steadily. He expected no less; during the sowing, he used the metallic automata made in Switzerland, strong and incapable of feeling exhaustion, to plough the land instead of horses. Or slaves.

It worked. Now he will have time to develop new engines and contraptions. Maybe even more than he had first conceived when he bought the machines in his travels through Europe. Upon hearing of his ability to dismantle and repair these foreign demons (that's how some ignoramuses from outside Kansas City started called the Diener; stupid, hardheaded people, thought the Farmer), a man from an arms company went all the way from Connecticut just to talk to him. Winchester, that was the man's name. Told him a man with his talents was much needed in the gun business.

He didn't answer yes or no, but deep inside the Farmer is also an Engineer, and this man is already thinking of ways of improving the design of the repeating rifle Winchester told him about. Voice reckoning, perhaps?

He liked to experiment with sound

and voices. That was what he was thinking of doing just before Winchester paid him that visit. To make the automata talk. Maybe fitting a wax cylinder into the inner workings of a Diener would do the trick, he thought.

He could make smaller wax cylinders. Or, in case the wax crumbled, tinfoil. But talking was not the issue here; the automata did not need to talk: they needed to listen. Listen to their master's voices.

On the other hand, he was thinking along the lines of a mechanical scarecrow, but with something more than just a scary look to it: perhaps a screeching sound to shoo the birds away. Tinfoil could provide screeching just fine.

Farther away, the automata worked indifferent to the machinations of the Farmer. Slowly but steadily, they extended metal arms and sprayed a diluted solution of water and Herakleophobia II, a chemical he also bought for a little fortune from a small company in London. It would greatly accelerate the growth and the size of all kinds of foods, he was told. A veritable food of the gods, sir, they said. And they showed him some of their crops. Big crops.

Standing alone in the middle of the field, the Farmer looks at his domains. The farm is doing good, he concludes satisfied. It will thrive.

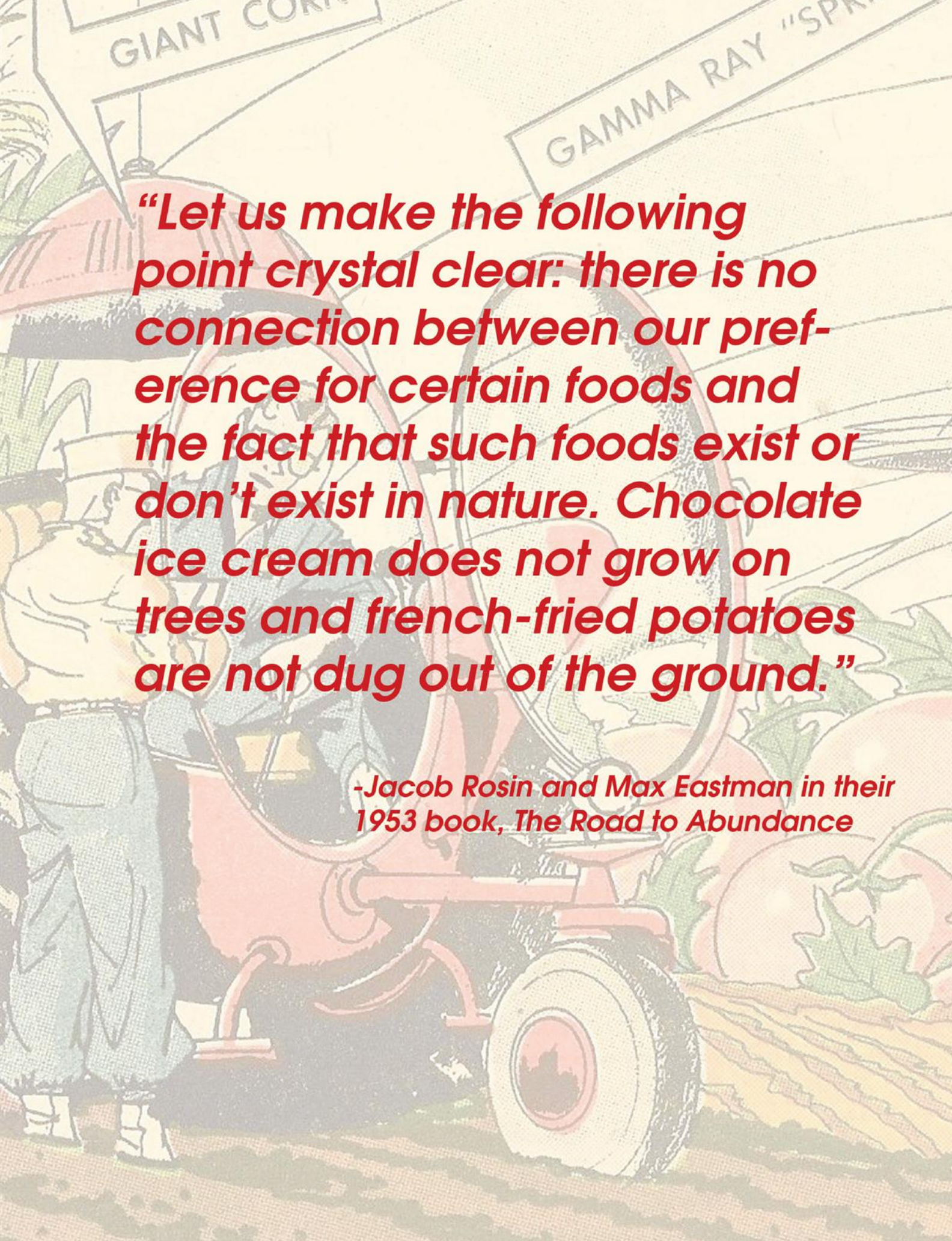


*Short story by Fábio Fernandes. (pictured)
Illustration by Mike Frodsham.*



WALKING CRANE





“Let us make the following point crystal clear: there is no connection between our preference for certain foods and the fact that such foods exist or don’t exist in nature. Chocolate ice cream does not grow on trees and french-fried potatoes are not dug out of the ground.”

-Jacob Rosin and Max Eastman in their 1953 book, *The Road to Abundance*

